

**Exploring attention-deficit/hyperactivity
disorder knowledge and
perceptions among psychology master's
students of the North-West University**

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requirements for the degree *Master of Social Science in
Clinical Psychology* at the North-West University

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Declaration

I, the undersigned, Masego Matau, declare that this study entitled “Exploring Attention-Deficit/Hyperactivity Disorder knowledge and perceptions among psychology master’s students of the North-West University” which I submit to the North-West University, Mafikeng campus is in compliance with the requirements set for the degree Master of Social Science in Clinical Psychology. I further declare that this mini dissertation is my original work and has not been submitted to this or any other university to obtain a degree.

Masego Martha Matau

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Summary

Attention-deficit/hyperactivity disorder (ADHD) is among the most diagnosed disorders of child and adult psychiatry. Despite the high prevalence and the availability of several studies conducted on ADHD, the psychology master's students' knowledge about the disorder is scant. Psychology master's students often engage in clinical and research-related work during which the students play an integral part in researching, observing, identifying, assessing, and treating ADHD. Therefore, it is useful to have an understanding of the knowledge and perceptions of these students. For this reason, this study's aim was to explore psychology master's students' perceptions of ADHD to gain an in-depth understanding of their knowledge of the disorder. The study followed a qualitative research approach in which students from the Mafikeng and Potchefstroom campuses of the North-West University, South Africa, were purposely selected to partake in the study. A sample of 13 psychology master's students were interviewed, guided by a semi-structured interview schedule to collect data. Data was analysed using thematic analysis and useful insights were identified. The results of the study suggest that students had knowledge and understanding of the nature of ADHD together with the inattentive hyperactive/impulsive-related behaviours connected to the disorder. The findings showed that students believed that there are various aetiological agents, including an unhealthy pregnancy, genetics, and trauma. The results also indicated students' awareness of the process of diagnosis and alluded to the impact of an ADHD diagnosis. Students' perceptions of treatments showed that they favoured psychotherapy and pharmacotherapy and indicated a need for more knowledge about the treatment of ADHD. The exploration of the experiences of students revealed ambivalent feelings among students, although they were generally open to the experience of working with ADHD

individuals. Since the study was small in nature and focused on psychology master's students, it is recommended that a nation-wide large-scale study of a quantitative nature with similar focus be conducted to increase literature and awareness of ADHD knowledge in the field of psychology.

Keywords: ADHD; psychology; master's students; knowledge; perceptions

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List of Abbreviations

ADHD	Attention-Deficit/Hyperactivity Disorder
APA	American Psychological Association
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
HREC	Health Research Ethics Committee
NWU	North-West University
RDGC	Research Data Gatekeeper Committee

Chapter 1: Overview of the Study

Multiple efforts have been made to enhance knowledge about attention-deficit/hyperactivity disorder (ADHD), and institutions of higher learning play a role in public education using platforms such as lectures, seminars, and workshops for both healthcare professionals and non-healthcare professionals (Murtani et al., 2020). Future healthcare professionals, such as psychology master's students, are exposed to such platforms as sources of knowledge throughout their training. They put this knowledge to use when they help patients with various psychological disorders, both while they are still students and in their future careers. Such individuals are entrusted with the important role of contributing to the general welfare of patients in the healthcare system. Psychology master's students' knowledge may influence their perception and ultimately how they offer services to clients, as well as their academic performance and professional development. Thus, it can benefit students, patients, and the community of scholars in the field to explore students' knowledge and perceptions of ADHD, as this has implications for future treatment of and attitudes towards patients and/or clients with ADHD.

In light of the above, the purpose of this study was to explore knowledge and perceptions of ADHD among the psychology master's students of the North-West University. The first chapter provides a broad overview of the research study, problem contextualization and formulation, motivation of the study, and the focus of the study. An overview of the research methodology is also outlined, together with the ethics implications.

Background and Motivation to the Study

Attention-deficit/hyperactivity disorder (ADHD) is a heterogeneous, developmental disorder associated with behavioural symptoms of inattention, hyperactivity, and impulsivity (Richardson et al., 2015), that are in excess and displayed in a manner that is age-inappropriate for an individual's level of development (American Psychiatric Association [APA], 2012; Krain & Castellanos, 2006). Several studies have been conducted on ADHD (Bakare, 2012; Murtani et al., 2020; Seabi & Economou, 2012). However, Tatlow-Golden et al. (2016) reported that these studies are limited and have suggested an urgent need for updated and more wide-ranging research. These authors continue by stating that there are limited studies in the field of psychology that specifically explore ADHD knowledge and perceptions among a population of healthcare professionals (Tatlow-Golden et al., 2016). Additionally, the researcher, as a master's student, noted a gap in ADHD knowledge while engaging in practical work at a local hospital. The researcher found it challenging to formulate a treatment plan best suited and tailored for the patients with ADHD, which impacted on the effectiveness in rendering treatment services as a student psychologist, possibly compromising those with ADHD. Murtani et al. (2020) claimed that if left unattended, this gap in research will remain in other university populations across the country. The shortage of such studies continues to put pressure on various researchers in the field to investigate and explore ADHD-related topics (Tatlow-Golden et al., 2016). The identified gap provided motivation and an opportunity for the researcher to embark on this study to explore the ADHD knowledge and perceptions of master's students in psychology. Furthermore, a South African ADHD study by Marais et al. (2017) recommended that university populations across the country should explore this for a more objective understanding of ADHD knowledge.

Despite the high prevalence of ADHD, a predominant theme that emerged from studies is that the general knowledge and understanding of ADHD seem lacking (Tatlow-Golden et al., 2016). Although findings of a study about ADHD conducted at a South African university (Langlois, 2020) reported that knowledge was generally high, contradictory findings reported a lack of knowledge about ADHD among university students (Vibert, 2018). Additionally, some studies report controversies around several aspects of ADHD, including existing disparities in knowledge and perception, a lack of interest, outdated and non-scientific sources, as well as different information presented by multiple sources (Kildea et al., 2011; Murtani et al., 2020; Te Meerman et al., 2017). Considering the fact that psychologists in university training often depend on somewhat structured-based knowledge and approaches to treatment to allow welfare (Salter & Rhodes, 2018), the confusion that comes with a lack and complexity of knowledge makes students prone to scepticism when they offer ADHD treatment (Miller et al., 2019), thus negatively affecting ADHD patients. This specific area is worthy of exploration as Miller et al. (2019) revealed that a lack of knowledge about ADHD may leave psychologists feeling incompetent and thus sceptical about treating patients with ADHD. The same experience can be expected with psychology master's students. Without a doubt, a lack of knowledge and understanding is a problem for many students involved, and it negatively affects academic success and the future careers of psychology master's students.

The study may assist psychology master's students to better understand individuals diagnosed with ADHD and develop informed interventions for their treatment. It is in this context that the researcher aimed to explore the knowledge and perceptions of the psychology master's students to take the first steps in addressing the problem.

Problem Formulation

Despite the high prevalence of ADHD and the extensive body of research over the years, research evidence continues to indicate a lack of ADHD knowledge (Vibert, 2018), controversies (Hinshaw, 2018; Mucci et al., 2018), and stigma attached to ADHD (Fuermaier et al., 2012), even among healthcare professionals. For example, a study conducted in Indonesia on the level of knowledge/understanding and perception involving 96 psychologists, revealed that not only were the levels of understanding of psychologists poor, but their perceptions were in general negative due to their inadequate knowledge of ADHD (Murtani et al., 2020). It was further revealed that some healthcare professionals believed that ADHD is not a mental disorder as it was not perceived to be as severe and extreme as conditions like schizophrenia (Murtani et al., 2020).

Some studies have been conducted at South African universities on ADHD about students' perception and use and abuse of ADHD medication (Dreyer et al., 2016; Marais et al., 2017). Although such studies are limited and specifically focus on methylphenidate as ADHD medication and not the knowledge and perceptions of ADHD as a whole, they echo the need for imparting more knowledge about the use of ADHD medication and further implored relevant structures to head this call of educating students about the use and abuse of ADHD medication (Dreyer et al., 2016; Marais et al., 2017). Among those responsible for sharing knowledge and informing about ADHD as part of coursework and future careers are psychology master's students, however little is known about the knowledge that they possess about this topic. As such the researcher identified a gap in literature about the students' knowledge and perceptions of ADHD. Therefore, the results of this study can add to the existing literature that forms the basis for ADHD knowledge in the country (Murtani et al., 2020). The identified population of the

study (students in training at the North-West University (NWU)) has been minimally explored pertaining to ADHD research. Therefore, exploring and understanding the knowledge and perceptions of the students will add to the academic and scientific knowledge of ADHD knowledge and perceptions in the field of psychology at the NWU.

The knowledge professionals have about ADHD and their perceptions concerning the condition are imperative if they are to work with individuals with ADHD (Langlois, 2020). This is because a low level of ADHD knowledge among healthcare professionals may contribute to the development of a negative view of individuals with ADHD, influencing interactions with such people (Lawrence et al., 2017). A lack of ADHD knowledge can also negatively affect the student psychologists' effectiveness in rendering appropriate diagnostic and treatment services in the workplace, thus, compromising those with ADHD. A study by Adamis et al. (2019) reflected that poor knowledge about ADHD and a negative view of ADHD can lead to undiagnosed or misdiagnosed cases. Undiagnosed or misdiagnosed cases can cause delays in treatments and result in psychosocial problems for people with ADHD (Park et al., 2018). Additionally, there is an increased risk of delinquent behaviour including alcohol and drug abuse that comes with having untreated ADHD and family members and the community at large face the repercussions of troublesome behaviour including at times disobedience and crime (Mochrie et al., 2020). It is therefore vital for future psychologists to have knowledge of ADHD and be cognisant of the possible impact of their actions. They should know how to aid effectively and those doing research should know how to approach the process of research when working with people with ADHD and which areas of ADHD research to further explore.

Although clinicians do receive training on ADHD and often find it useful to incorporate data from diagnostic instruments with clinical material gathered during a comprehensive

evaluation (Lambez et al., 2020), research evidence suggests that some clinicians may be sceptical of treating patients with ADHD (Miller et al., 2019). A study by Kooij et al. (2019) indicated that the main reason for clinicians' scepticism was the deficient instruction about ADHD in programmes that train mental health professionals, which creates fears and concerns among clinicians about their ability to treat ADHD. That being said, psychology master's students, while engaging in practical work at a psychiatric, research, and/or other setting, may encounter patients with ADHD. These clinical and counselling psychology students are expected to diagnose and treat ADHD and research psychology students have to work with individuals with ADHD in areas of research. Psychology master's students were selected to participate in the current study. This allowed the researcher to explore their knowledge and perception of ADHD to understand the role that ADHD knowledge plays in their understanding and perceptions, which have implication for how they conduct research with individuals suffering from ADHD.

Considering the problem, the following research questions were formulated:

- What knowledge do NWU psychology master's students have of ADHD?
- What are the psychology master's students' perceptions of ADHD?

Operational Definitions of Key Concepts

ADHD

In the context of this study, ADHD refers to a chronic condition characterized by a persistent pattern of behaviour that affects how an individual operates. It typically involves inattention and/or hyperactivity-impulsivity-related behaviours (APA, 2013).

Knowledge

In the context of this study, knowledge refers to the theoretical or practical information and understanding of a subject (Ausubel, 2012), in this case ADHD.

Perceptions

According to Pautz (2021) perception is the first point of contact that the mind has with the world. In the context of this study, perceptions refer to a viewpoint or attitude held by a group of individuals based on how things appear (Cambridge University Press, n.d.). This implies that it is something considered, recognized or interpreted, and mostly determined by belief, affecting and informing an individual's frame of reference.

Psychology Master's Students

Psychology master's students are individuals registered for a psychology degree at a university. In the context of this study, psychology master's students are those students who are enrolled for a master's degree in clinical, counselling, and research psychology at the NWU.

Patient

In the context of this study, a patient means a person seeking and/or receiving services from a clinician(s). The term patient is used interchangeably with client.

Aims of the Study

The aims of the study were to:

- Gain an in-depth understanding of what knowledge psychology master's students have; and
- Explore psychology master's students' perceptions of ADHD about ADHD.

Overview of the Research Methodology

The researcher was interested in the detail and depth of the knowledge and the perceptions of psychology master's students at NWU. As such, a qualitative approach was considered appropriate for the study as it allowed the researcher to explore various individual views on the topic (LoBiondo-Wood & Haber, 2014). Furthermore, qualitative research involves exploration and in-depth description of social processes to relay nuanced complexity and detail to increase knowledge, understanding, and change perceptions (Korstjens & Moser, 2017). Limited evidence and documentation on the knowledge and perceptions of master's students in psychology were found, making the study relatively new. For this reason, the exploratory research design was chosen. According to Djamba and Neuman (2006), the exploratory research design is employed to investigate problems that are not clearly outlined. Exploratory research is a preliminary study of an unfamiliar problem about which the researcher has little or no knowledge. According to Burns and Bush (2010), the exploratory research design consists of gathering information in an informal and unstructured manner. It does not aim to give conclusive findings to research questions, but rather aims to explore a specific research topic and questions. Exploratory research was used to gain insight and provide direction for further research (Reiter, 2017). Using semi-structured interviews to explore ADHD knowledge, understanding, treatment,

and stigmatization among psychology master's students at the North-West University (NWU), the study aimed to address the gap in literature.

The research focused only on psychology master's students. Thirteen (13) participants, both male (3) and female (10), who were enrolled for a master's degree in clinical, counselling, and research psychology at the NWU, were interviewed. The data was analysed using thematic data analysis. The thematic analysis technique includes phases stipulated by Braun and Clarke (2006) including: familiarizing oneself with the data, generating initial codes; searching for themes; reviewing themes; defining and naming the themes and report writing. A comprehensive discussion of the methodology followed in this study is provided in Chapter 3 of this dissertation.

Recruitment of Participants

Falling into the category of non-probability sampling, purposive sampling was used to select participants for the study. Purposive sampling allowed for the deliberate and specific selection of a particular sample in accordance with required specifications of the study (Ritchie et al., 2013). This type of sampling was appropriate for this research as it was interested in exploring specifically psychology master's students' knowledge and perceptions of ADHD. The population from which the sample was selected was treated with fairness and equality throughout the sampling process.

Due to the lockdown to manage the COVID-19 pandemic and the general restrictions after the lockdown, the research procedure, techniques, and methodology were adapted to comply with lockdown regulations (Sy et al., 2020). The researcher sought ethics clearance from the Health Research Ethics Committee (HREC) of the North-West University, as well as the Research Data Gatekeeper Committee (RDGC). This was done online.

A virtual poster about the research was created. The poster was used to invite participants to become involved in the study. It was posted on the various NWU student Facebook groups, the eFundi website, and sent to the master's students via email communication. The poster provided the title, aims of the study, expectations, conditions/inclusion criteria, and contact details of the researcher and the research assistant.

The poster contained a link that led participants to a detailed form with clarity on the research. It allowed participants to fill in their names, email addresses and contact details. After indicating their willingness to participate, the researcher contacted participants via cell phone or email. The research assistant was appointed to aid and clarify should participants need clarity on the study or informed consent. The researcher trained the research assistant to adequately understand the study. The researcher further explained the research, its aims, and the process of consent and set a date to discuss and sign the consent form.

The researcher also sent the consent form via email to allow participants to familiarize themselves with the consent form. Participants were given a week to evaluate and familiarize themselves with the informed consent form and to decide about their participation.

To comply with lockdown regulations, the research procedure, specifically the process of getting consent, was adapted. As opposed to meeting with participants face-to-face for them to sign informed consent forms, the researcher conducted the process through Skype. The researcher and participants set an appropriate date and time (over the phone) for both parties to meet virtually to discuss the content and for the signing of the informed consent form. The researcher further emphasized that participation was entirely voluntary and that the participants were free to refuse to participate. If they had declined participation, it would not have affected

them negatively in any way whatsoever. Furthermore, the researcher explained that the participants were also free to withdraw from the study at any point, even if they had agreed to take part initially. Following such, the participants and researcher signed the consent forms, each in front of a witness.

After signing the consent forms, participants were requested to take a picture of the consent form (including signatures) and send it to the researcher via WhatsApp. These pictures were immediately transferred and stored in a research folder on a password-protected computer. The electronic copies were stored until the researcher received hardcopy originals of the signed informed consent forms. The pictures were kept as proof of informed consent and were deleted from WhatsApp following transfer to the research folder. This was done because the researcher and participants could initially not meet physically because of the lockdown and resulting regulations. Furthermore, the participants were asked to send the original signed informed consent forms in whichever way was most convenient to the participants. This was done either through the use of postal services such as Aramex or Postnet, email attachment, or alternatively meeting in person, at which time the researcher ensured compliance with the applicable COVID-19 guidelines. This included the use of infrared forehead thermometer for temperature (screening), masks/shield visors, keeping a two-metre distance between the researcher and participant, use of hand sanitizers, and sanitising all equipment used. After receiving the consent forms from participants, both the researcher and individual participants set a date for a Skype interview.

Ethics Implications and Considerations

Permission to Conduct the Study

The researcher sought and obtained ethics clearance and approval for the project from HREC (NWU-00244-21-A1) of the North-West University as well as the RDGC prior to the study commencing.

Informed Consent

According to Martins and Zin (2001), one must ensure that the participants are willing to partake in the study before the start of the research. Participants indicated willingness to participate by clicking on the link that came with the study advertisement (see Addendum D). As a result of the COVID-19 pandemic, the research assistant who had been trained to run the process of getting consent could not do so and the students did not have to physically meet with the research assistant to sign consent forms. The process was undertaken by means of online communication with the participants. Informed consent forms were sent via email to each participant's personal email address. With each participant, the researcher explained and ensured that participants understood what the study was about, the aim(s) of the study, and how the process of the interview would unfold with specific reference to the questions to be asked. Each participant was requested to return the signed informed consent.

Respect for Participants

The researcher not only observed but explained to the participants prior to each interview the right to self-determination. The participants could at any point choose to no longer participate in the study without withdrawal resulting in any consequences. The researcher explained to the

participants that their participation was required to serve the purpose of understanding their knowledge and perceptions as psychology master's students to contribute to ADHD literature and not to violate or manipulate them to achieve the researcher's personal goals.

Experience of Participants

Opportunity was given to all master's students in psychology at the NWU to participate in the study. No participants experienced psychological harm by disclosing their perceptions of ADHD, and thus the researcher had no request for referrals to a psychologist based at the Academic Development Centre (ADC).

Risk Level of the Study

This study risk level was estimated to be minimal as the study was not investigating a sensitive personal matter. However, as a precautionary measure, the researcher took into account beforehand the possibility of psychological harm and discomfort if participants, by disclosing their perceptions of ADHD, felt embarrassed to share. To further minimize such risks, the researcher explained the importance of confidentiality to participants throughout the study, ensuring that participants felt at ease. Moreover, the researcher refrained from probing more than the participants were willing to give and in cases where probing was necessary, the researcher did so empathically to alleviate any possible uneasiness and barriers the participants may have had in disclosing more. None of the participants asked for a referral to a psychologist as none indicated having experienced psychological harm and discomfort following the interviews, neither did the researcher observe or notice anyone who needed referral for an intervention.

Benefits

Knowledge gained from this study will indirectly benefit the community by providing greater insight into ADHD knowledge and perceptions. Furthermore, the research also indirectly benefits the broader community of students by creating greater awareness about their knowledge and perceptions, which, in turn, can potentially contribute to their motivation to seek more knowledge and education regarding the disorder.

Token of Appreciation

The initial plan prior to COVID-19 was to give notebooks and pens to participants as a token of appreciation after each interview. This, however, was changed to align with regulations that came with lockdown levels and regulations. The researcher reimbursed the participants for their use of data to allow for the Skype interview to be conducted. Participants each received a R100 data voucher after each interview, which was loaded to the preferred cell phone number or digital platform of participants. This was communicated in the participant recruitment poster and was calculated by considering the estimated length/duration of the interview. The researcher was cognizant of the fact that participants took personal time as a result of their participation in this research study. As such, following the interviews, the researcher also provided participants with a data voucher as a token of appreciation for having taken part in the study.

Confidentiality, Anonymity, and Privacy

Confidentiality was maintained by ensuring that none of the participants' personal information could be disclosed recklessly in any way. The participants were not identified. After they had signed the informed consent documents, the forms were collected and kept in a cupboard in a supervisor's office, with access given only to the research team.

No names of participants were disclosed to the public. All participants were assigned codes, using letters for identification purposes. The interpretation and reporting of data were done in a fair manner as agreed by the researcher and co-coder. Privacy was ensured by not disclosing participants, instead using pseudonyms such as Participant A, Participant B, etc. to identify the participants and ensure the anonymity of the participants' identity. To further ensure privacy since the interviews were conducted via Skype, the researcher requested participants to find a quiet and private area in their home/s or any place where they were comfortable with no disturbances.

Role Players

An independent co-coder trained in qualitative research was tasked with the responsibility of analysing the data. All role players have certificates in Basics of Health Research Ethics. The researcher, research assistant, and co-coder currently work in the field of psychology at the NWU and have had appropriate training required for the study. The mediator acts as a COMPRES administrator.

Expertise of Researchers

The researcher made sure to follow through on the directives received during consultations with the research supervisor. The supervisor has more than 20 years of experience with postgraduate research supervision and has published in national and international journals, has skills and knowledge related to qualitative research design process and the process of data collection. Additional directive was also taken from the co-supervisor, who completed a PhD using a qualitative enquiry. The researcher and supervisor(s) attended workshops on Basics of Health Research Ethics and obtained certificate(s) of competency and completion. Additionally, the researcher has attended different research workshops and obtained certificates in Training

and Resources in Research Ethics Evaluation (TRREE), which covered topics such as introduction to research ethics, the informed consent process, and research ethics evaluation.

Dissemination of Results

The results of the study will be communicated to participants via email through a poster as soon as the study has been completed. The researcher informed the participants during the process of data collection that a poster would be made available for viewing at a later stage once the study had been marked and completed. No names of the participants will be mentioned in the poster. The researcher will be diligent and accurately report the results in accordance with the final marked research paper. Furthermore, the researcher will ensure that the language of reporting in the poster is consistent with that of research while clearly communicating the results in a way that the participants would be able to understand.

Storage and Archiving of Data

Data collected during interviews (using a digital voice recorder) are stored on a password-protected computer. The co-coder was requested to immediately delete the data after analysing it. To ensure further protection of physical data, it is stored in a locked cupboard in the supervisor's office, and will be kept for a minimum period of five (5) years, with only limited access before it is destroyed. Furthermore, a research team member was tasked with ensuring that all electronic data are deleted from the password-protected computer and the recycle bin.

Outline of the Dissertation

Chapter 1 provides a summary of the study, background and the motivation of the study, problem formulation, aims of the study, operational definitions of key concepts, the significance of the study, overview of research methodology, participant recruitment, and ethics implications of the study. Chapter 2 offers a literature review of the available research on the knowledge and

perceptions of ADHD, covering the diagnosis and description of ADHD, conceptualizations of ADHD, treatment, mental health literacy, students' knowledge and perceptions of ADHD, perceptions and stigma attached to ADHD. Chapter 3 outlines the research methodology that was followed in this study. Chapter 4 provides the analysis of data and presents the findings. Chapter 5 discusses the results of this research study. Chapter 6 provides a summary, discusses the limitations and strengths of the study, and provides recommendations for further and/or future studies.

Summary

In this chapter, the researcher gave a general overview of the study. Specifically, the chapter focused on the background and motivation of the study, problem formulation, aims of the study, operational definitions of key concepts, the significance of the study, overview of research methodology, participant recruitment, ethics implications, as well as a provisional chapter division.

Chapter 2: Literature Overview

Introduction

This chapter provides an overview of the available literature on ADHD knowledge and perceptions. The literature was generated from multiple databases and search engines such as Sabinet, Google Scholar, PubMed, Ebscohost, JSTOR, SpringerLink, Science direct, and published dissertations and books. The chapter begins by providing a brief overview of ADHD, then discusses the diagnosis and description of ADHD, followed by the conceptualization of ADHD from various perspectives, treatment and management, knowledge and perceptions of ADHD, mental health literacy, and ADHD stigmatization. The chapter offers a general overview of knowledge of and perceptions of ADHD, highlighting that it is indeed a phenomenon that needs attention, especially from professionals who are trained to work with individuals challenged by ADHD.

Despite a considerable body of research on ADHD, research that explores knowledge and perceptions of ADHD, specifically from the perspective of psychology master's students at South African universities, remains scant. To direct the literature for this present study, the researcher also drew from findings of similar studies from both international and South African contexts.

Overview of ADHD

Some of the descriptions of disruptive behaviour and behaviour characterized by struggles with inhibition dates from 1902, when parents brought their boy children to visit an English paediatrician, George Still, at his practice (Martinez-Badía & Martinez-Raga, 2015; Mayes et al., 2008). Modern literature reflects that ADHD-related behaviour would commonly

be picked up in the classrooms by teachers. This may be because children spend most of their time in classrooms (Ahmed et al., 2017; Perold et al., 2010), which typically have rules that require attention, following of instructions, and the completion of tasks. ADHD symptoms therefore often become more noticeable when a child starts formal schooling and is unable to successfully follow through with instructions given in class (Mulholland, 2016). Initially referred to as “hyperkinetic” in the 1970s and regarded as a boy child disorder, an increase in ADHD diagnosis in girls was witnessed in the first decade of the twenty-first century (Fairman et al., 2020). To date, ADHD is known as the most common mental health diagnosis in children (Ouchi et al., 2013; Polanczyk et al., 2014) and is characterized by frequent and severe displays of inattention and hyperactivity-impulsivity (APA, 2013). Adult ADHD has since been included in the latest version of the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5) (APA, 2013). Mental health professionals often engage in the diagnostic process and treatment of ADHD (Langlois, 2020). The dominant view held by health sciences presently lies in the conceptualization of ADHD as defined in the DSM-5 (APA, 2013), which is explored in the next section.

Diagnosis and Description of ADHD

The criteria for an ADHD diagnosis as stipulated by the DSM-5 (APA, 2013) include a persistent pattern of (1) inattention and /or (2) hyperactivity-impulsivity that interferes with the functioning or development of an individual. The DSM-5 (APA, 2013) specifies three subtypes, namely combined, predominantly inattentive, and predominantly hyperactive/impulsive. An ADHD diagnosis is based on observations of several behavioural symptoms of inattention, impulsivity, and hyperactivity across various settings and over a certain period (Patel et al., 2021). With both the inattentive and hyperactive-impulsive subtypes, six or more of the

symptoms in the criteria must be met with the symptoms persisting for at least six months and symptoms being atypical for the person in question's developmental level, and negatively affect important areas of functioning such as social interactions and academics. The impulsivity that comes with the disorder can manifest as struggling with waiting in line and can also be in the form of blurting out answers before questions have been completed (APA, 2013). According to Dikel (2019), in adults with ADHD the incapacity to regulate impulses can show in a variety of ways, including agitation with driving in traffic, frequent and abrupt changes in mood, and anger outbursts. The individuals with ADHD commonly experience inattention and impulsivity symptoms that result in them not being able to concentrate, not finishing activities, having things disarranged, and hasty and uninhibited behaviour (Coles et al, 2014). According to Tatar and Cansız (2022), executive function deficits are observed with ADHD. Naglieri and Goldstein (2014) explained executive functioning as cognitive processes that allow exercises such as selecting, sustaining, switching, and inhibiting the flow of information. The authors further indicated that executive functioning allows for the ability to plan, direct attention, recall commands, and switch attention between tasks. Diamond (2013) asserts that these tasks are important for learning and for good academic performance. A trend of compromised academic performance due to ADHD and poor executive functioning has been witnessed among university students (DuPaul et al., 2021; Henning et al., 2022). Adults with ADHD often struggle to prioritize and end up not complying with specific deadlines and forgetting important events (Green & Rabiner, 2012).

According to Bakare (2012), the prevalence of ADHD in South African children is about 5%, while the global adult prevalence has been indicated to be between 2.5% to 4.4% (APA, 2013). The prevalence of ADHD in South Africa in clinical psychiatric settings is reported to be

52.5%, of which 13.7% are those newly diagnosed (Schoeman & Liebenberg, 2017). ADHD affects millions of children and although the symptoms sometimes lessen with age, it is considered chronic from a lifespan perspective: starting in childhood, persisting in adulthood until old age (Kooij et al., 2013). Longitudinal studies have reflected that as many as 76% of children diagnosed with ADHD experience symptoms throughout adult life as well (Agnew-Blais et al., 2016; Biederman et al., 2010; Kooij et al., 2019). In the context of this study, ADHD is seen as a condition that affects children, students at university, and adult populations in general. Symptoms include challenges with paying close attention to details or making careless mistakes in schoolwork, at work, or during other activities, often struggling to arrange tasks, inability to remain still without squirming or fidgeting with hands or feet, and difficulty waiting for one's turn (APA, 2013). Fleming and McMahon (2012) explained that the university context often subjects students to a variety of stressors that present challenges to individuals who experience problems with maintaining attention, organizational problems, poor self-regulation, and who struggle to put off engaging in things that bring immediate gratification. Additionally, ADHD has consistently been associated with a reduced efficacy of inhibition of behaviour (Pedersen & Ohrmann, 2018, Sadeghi et al., 2019). Cooper-Kahn and Dietzel (2008) described inhibition as the capability to properly put an end to a certain behaviour. To be successful in meeting coursework demands, students ought to be able to inhibit context-inappropriate thoughts and focus on assigned tasks (Ahrens et al., 2019). Individuals with ADHD have been reported to make errors in academic tasks as an outcome of poor inhibition (Pedersen & Ohrmann, 2018). According to Weyandt and DuPaul (2013), research has seen an increase in university students requesting an assessment for ADHD over the years.

Generally, persons with ADHD are more likely than others to have other co-occurring conditions such as learning disabilities, anxiety disorders, depression, bipolar disorder, oppositional defiant disorder (ODD), conduct disorder (CD), and Tourette's syndrome (Patel et al., 2021; Solberg et al., 2019). Research on gender and comorbidity comparing adults with and without ADHD revealed that both men and women with ADHD had a four to nine times higher prevalence of depression, anxiety, bipolar and personality disorders, schizophrenia, and substance use disorder as compared to the general adult population (Solberg et al., 2019). The authors reported a relatively higher prevalence of most psychiatric comorbidities linked with ADHD in females as compared to males. However, males were reported to most likely be diagnosed with ADHD compared to females and comorbid conditions in males with ADHD often included ODD and conduct disorder (Azeredo et al., 2018; Vetter et al., 2020). Solberg et al. (2019) recommended that clinicians treating adults with ADHD be cognizant of these frequent and gender-specific comorbidities to ensure the provision of early and relevant treatment, and to serve as a preventive measure to reduce the risk of future psychiatric comorbidity. The timeliness of such treatment has been reported to be influenced by health professionals' knowledge of ADHD, which enables the recognition of ADHD (Sayal, 2010). To recognize ADHD, Crucita and Alfanzo (1997) stated that an ADHD diagnosis requires several procedures to be followed, including getting developmental histories, clinical procedures, observations, and recordings. Similarly, Hauk (2013) added that for an ADHD diagnosis to be made, an in-depth clinical interview ought to be conducted and a behaviour rating scale should be administered. The clinical interview usually entails the clinician asking the client about experienced symptoms and determining the extent of the negative impact of the symptoms on the client's life. Additionally, the client's developmental, family, educational, psychiatric, and

medical histories are considered along with the possibility of the presence of other conditions, such as depression and anxiety, which commonly co-occur with ADHD. While the clinical interview is of great value, it has also been criticized for not being free from personal bias. Additionally, the extent to which ADHD negatively affects one's life is believed to be based on the professionals' perceptions. A study by Goh et al. (2021) indicated the extent of the impairment (in the lives of the diagnosed) caused by having ADHD included failing to follow through with instructions, being unorganized, and making careless mistakes. The researchers found in their study that these symptoms, in comparison with other ADHD symptoms, were key determinants for estimating the general and specific impairment of the disorder. Using objective measures has been found to contribute useful detailed information for diagnosis of ADHD.

According to Hofer (2010), psychology master's students (including the ones in the current study) may observe and be asked to diagnose ADHD in the broader population at hospitals when doing practical work or engaging in research. It is important that those diagnosing ADHD understand the disorder and the procedure to follow to diagnose it, because over the years research has seen an increase in university students requesting an assessment for ADHD (Weyandt & DuPaul, 2013). Based on the literature reviewed, it is evident that many studies focus on the process of ADHD diagnosis alone, ignoring the knowledge of those who offer the service of diagnosing it. The minimal literature reporting on the level of knowledge of professionals indicated a self-confessed lack of expertise in the ADHD diagnostic process among health professionals. Primary care physicians reported having insufficient knowledge and explained that they have received minimal clinical preparation for diagnosing ADHD. They also mentioned a lack of clarity in diagnostic criteria, and indicated difficulties diagnosing adults compared to children (Adler et al., 2009; Marshall et al., 2021). Due to impairments resulting

from symptoms of ADHD, it is not only necessary for clinicians and students to have adequate knowledge of evidence-based assessments of ADHD, their knowledge and perceptions (ADHD) must also be known (Hofer, 2010).

Overall, based on literature reviewed, multiple aspects ought to be considered when engaging in ADHD assessment prior to diagnosis. Literature also suggests the use of both objective and subjective measures, which is more likely to offer greater accuracy about the presence of symptoms for diagnosis of both children and adults (Emser et al., 2018). While many studies focused on explaining ADHD and the process of diagnosing ADHD, some focused on the knowledge that professionals have about ADHD diagnosis and found gaps in knowledge about what to do in the process of diagnosing ADHD.

Conceptualizing ADHD from Various Perspectives

Ever since ADHD has been recognized as a diagnostic classification, there has been immense controversy around the disorder (Hinshaw, 2018; Malacrida, 2004; Mucci et al., 2018). Questions remain about the clinical-scientific legitimacy of the disorder (Perez-Alvarez, 2017). To explain and understand the aetiology and existence of ADHD, literature outlines prominent theories, which include the neurobiological model and social conceptualizing discourse.

The Neurobiological Basis of ADHD

The biomedical framework of ADHD has consistently been recognized as the leading framework used by psychologists to understand ADHD-related behaviour, as in the DSM-5 (Brady, 2014). The typical understanding of ADHD found in this nosology posit that dysfunction of neurotransmitters and various brain structures have a causal contribution to ADHD (APA, 2013; Chan et al., 2022; Faraone & Biederman, 1998; Prince 2008). This is perceived by

numerous health professionals as necessitating treatment (Brady, 2014), which typically involves the use of psychostimulant medication/pharmacology. Pharmacological treatments are known for low potential for abuse and longer symptom improvement durations include Wellbutrin, Catepres, Tenex, and Strattera. Possible side effects include fatigue, nausea, and stomach problems, and these have to be weighed against the positive outcomes (Zetterqvist et al., 2013). Although the use of medication has often been criticized for its side effect profile and short-term and unsustainable symptom improvement, Timimi (2005), Parker et al. (2013) and Sharpe (2014) all advocate for the neurobiological view, stressing the behavioural response to the medication as bearing testament to the existence of a biological condition that is to be treated with medication. On the other hand, Brady (2014) asserts that this view of ADHD is perhaps a single truth and that other frames of reference present a less medicalized and more social perspective that informs explanation and forms of intervention.

Socio-cultural Conceptualization of ADHD

Although acknowledging the biological and genetic influence on behaviour, British child and adolescent psychiatrist and author, Sami Timimi, argues for a critical understanding of ADHD-related behaviour (Timimi, 2010). She conceptualizes the aetiology of ADHD as being a reaction to the environment, explaining that severe hyperactivity could be perceived as a strong determinant of poor psychosocial adjustment to the type of society created by adults, which socializes individuals into a value system that is individual-focused (Timimi, 2005). This conceptualization is relatively consistent with more recent findings that suggest an association between ADHD and childhood adversity (Russell et al., 2014). Behaviour manifestations such as difficulty concentrating, restlessness, agitation, and emotional regulation difficulties are linked to exposure to trauma (Russell et al., 2014; Szymanski et al., 2011). Supporters of this view of

ADHD-related behaviour claim that when individuals react with this behaviour, there is failure to take responsibility for the impact of a society they created as they rather label the behaviour with an ADHD diagnosis, requiring medical treatment (Timimi; 2010).

Literature shows that ADHD has been explained and viewed differently within different cultural contexts. Findings comparing ADHD perspectives in Korea and the United States of America (USA) highlighted the critical role that cultural influence plays in determining ADHD diagnosis and treatment (Moon, 2012). As compared to America, East Asian countries such as Thailand reported having fewer ADHD cases and this has been attributed to a cultural value system that prioritizes harmony with other people, devotion to the ways of the elders, and high-value education (Moon, 2012). Similarly, studies highlighting the African perspective of ADHD reported that the Ghanaian culture holds a similar value system that emphasizes behaving respectfully (Van der Geest, 2004). Inattention is viewed as stubbornness, while disruptive behaviour is viewed as signifying disrespect towards elders (Bröer et al., 2018). Stubbornness, “disruptive”, and “troublesome” are often used to describe suspected ADHD behaviour (Bröer et al., 2018, p. 20). Disobedience and stubbornness are normally described as speaking loudly in front of elders, not paying attention, being bouncy, and lacking humility. These behaviours are perceived as a sign of disrespect. Interrupting others is seen as rude (Bröer et al., 2018) and warranting punishment (Twum-Danso, 2009). The Southern United States culture has been criticized for tending to react with politeness and inadequate punishment for ADHD-like behaviour (Lawrence et al., 2017) and it has been questioned whether ADHD-related behaviour is a result of poor parenting skills (Price & Raffelsbauer, 2012). There are various understandings of whether ADHD is caused by paranormal/religious, medical, and/or the social milieu (Alharbi, 2018). The most common probes to understand ADHD within the cultural

context focuses on children with ADHD more than the adult population. This highlights the fact that ADHD is still commonly regarded as a disorder affecting children in various cultures.

Fleming and McMahon (2012) offered a perspective that conceptualizes adult ADHD. Their study highlights that the disorder lays dormant with some adults who had not been diagnosed as children. Another study with a similar understanding attributed adult-emergent symptoms to the individuals having not been previously exposed to high environmental demands (Taylor et al., 2022). Additionally, Taylor et al. (2022) explained that this occurrence could be because of individuals previously having parental support and the demands on the individual were manageable compared to when they experience it as adults without parental guidance. These studies purport that when at university, individuals encounter challenges associated with the university setting, which include the submission of assignments, working with others in group projects, learning how to manage finances, and maintaining relationships (Fleming & McMahon, 2012; Taylor et al., 2022).

In light of various perspectives on ADHD, master's training programmes in South Africa have been questioned on their ability to adequately prepare students for work in the South African context. Training programmes have previously been criticized for relying largely on western, individualist theories and viewing behaviours from such an understanding and in the application of treatment of such behaviours, overlooking and negating the African perspective and other alternative understandings as they relate to these specific behaviours (Ahmed & Pillay, 2004; Bandawe, 2005; Watson & Fouche, 2007). This can position the students to lack empathy for the person presenting with ADHD behaviour while working with them. Studies have maintained that it is important for psychology students to consider the diversity in the socio-economic, socialization, and cultural background of South African communities so that they can

be aware and remain sensitive as multicultural competence is important when working with patients to provide suitable mental healthcare treatment (Pillay et al., 2013; Schouler-Ocak et al., 2015). Despite the various perspectives, most can agree that ADHD-related behaviour is present in many parts of the world and should be addressed (Perez-Alvarez, 2017; Polanczyk et al., 2014). Mental health providers are dedicated to addressing ADHD through treatment interventions. Common treatment options are discussed in the next section.

Treatment and Management of ADHD

There are similar treatment options for adult ADHD and childhood ADHD. Among interventions of interest are medication, psychotherapy, and supportive interventions (Young et al., 2020).

Pharmacotherapy

Stimulant medications work by following a mechanism that ensures an increase in the arousal and alertness of the central nervous system, stimulating and propelling the production of the required neurotransmitters to send information to the parts of the brain that work with attention (Lerner & Johns, 2014). Among the stimulants, the first line and most common option is methylphenidate (Golmirzaei et al., 2016). Common stimulant brand names used for ADHD treatment include Ritalin, Dexedrine, Adderall, Concerta, and Vyvanse (Lerner & Johns, 2014). Although proven effective for most, some known side effects, sometimes due to an overdose, include decreased appetite, growth impediment, sleep disturbance (Groenman et al., 2017), as well as vasoconstriction associated with respiratory problems (Hennissen et al., 2017; Khouri et al., 2016).

Literature has documented increased use of stimulant medication among students at universities, especially students enrolled for courses perceived as having a high workload, being competitive, and requiring high grades and academic achievement to progress (Candido et al., 2018). The master's degree in psychology is a rigorous high-pressure academic and preparatory programme where students are taught among many things, client management skills (Edwards et al., 2014). The students are trained in areas of research, psychological assessments, intervention, and general mental health of diverse clientele, including children, adults, families, and other systems (Edwards et al., 2014; Hofer, 2010). According to Weyandt and DuPaul (2013), there is a general increase in understanding of ADHD in relation to perceived gain that comes with an ADHD diagnosis and the use of medication. Faced with a demanding training programme and trying to keep up, students may be prone to resorting to Ritalin use for non-medical reasons to improve concentration, alertness, and ultimately general academic performance (Wasserman et al., 2014). Specifically, Sharif et al. (2021) reported that a significant proportion of students using cognitive enhancers such as methylphenidate and dextroamphetamine/amphetamine were students from psychology classes. College health professionals were reported to view the abuse of stimulant medication as a concern that required them to spread knowledge of all risks involved in such a practice (Loskutova et al., 2020). A study by Gilmore (2010) reported that the majority of the public felt that medication was often prescribed very early in most cases.

Psychotherapy

Recent studies indicate that some studies support behaviour therapy (Catalá-López et al., 2017) while others support cognitive behavioural and dialectical behaviour therapy (Cole et al., 2016; Fullen et al., 2020, Weathers, 2022). Other empirically endorsed treatments include parent

intervention (Zwi et al., 2011) and school-based interventions (Malmqvist, 2018; Pelham & Fabiano, 2008). Some of the above-mentioned treatment options are discussed below.

Cognitive Behavioural Therapy (CBT). This approach is based on the benchmark for altering maladaptive behaviour that causes psychological distress with cognitive restructuring. Maladaptive behaviour in ADHD is seen with general deficits in executive functions, emotional regulation, and motivation. To accomplish effective cognitive restructuring, CBT employs strategies such as agenda setting, progress reviews, and setting of tasks between sessions (Catalá-López et al., 2017). In adults, ADHD maladaptive behaviour can be seen from secondary problems such as challenges with timekeeping in the workplace, issues with addiction, anger, relational problems, and sleep-onset insomnia. Anastopoulos et al. (2020) examined the benefits of CBT in 88 university students with ADHD and found CBT interventions to be useful. Specifically, the study found evidence suggesting that after CBT intervention, students displayed a notable decrease in ADHD symptoms, better executive functioning compared to before CBT and fewer comorbid disorders symptoms. Additionally, up to seven months into CBT intervention, students continued to show a decrease in the severity of ADHD-related behaviour and academic performance of the students remained stable (Anastopoulos et al., 2020; Asherson et al., 2016; Fields et al., 2017). CBT is generally considered to be a highly effective intervention addressing both primary (inattention, hyperactivity/impulsivity) and secondary (psychosocial) symptoms of ADHD (Catalá-López et al., 2017; Puente & Mitchel, 2016). For this reason, cognitive behavioural therapy interventions received strong pragmatic support (Catalá-López et al., 2017; Fullen et al., 2020; Puente & Mitchel, 2016; Vidal-Estrada et al., 2012).

Behaviour Management Strategies. Behavioural interventions available for ADHD treatment include antecedent and consequence-based methods (Kendall, 2008). The antecedent approach entails providing a limited number of rules that are clearly stated, understandable, positively expressed and explained regularly (DuPaul & Weyandt, 2006). Having followed such rules, Pfiffner et al. (2006) expressed it to be vital that praise and reward be offered to a student with ADHD as a reinforcement strategy. The benefits of this approach are clear from findings showing that following its implementation by a teacher and parent, a remarkable decrease in hyperactive behaviour and improvement in assignment engagement was observed in a six-year-old boy with ADHD (Wijayanti & Cahyadi, 2019). Interventions in a consequence-based approach targets behaviour (e.g., remaining seated on a chair). On accomplishing the task, the desired behaviour is rewarded with praise, awards or tokens, etc. (positive reinforcement) or by taking away something unpleasant (negative reinforcement) (Sidin, 2021). This intervention is effective in ADHD symptom treatment as it motivates the child to continue to engage in encouraging behaviour and decrease undesirable behaviour (Aziz & Yasin, 2018; DuPaul et al., 2011).

Parent Training. Parent training involves assisting the diagnosed child indirectly by involving parents or caregivers (Anastopoulous & Farley, 2003; Zwi et al., 2011). Parent training equips parents with skills aimed at behaviour modification of children with ADHD. Interventions include ADHD psychoeducation, effective implementation of positive reinforcement, and consequence-based approaches to behaviour. Noted as a benefit of parent training is improved parent confidence in managing routines that affect a child's behaviour (Zwi et al., 2011).

Consensus on ADHD treatment leans towards a multimodal treatment plan (Lerner & Johns, 2014; Wieber et al., 2018). This incorporates medications, psychotherapy covering family

and child counselling, behaviour management strategies, and educational and home interventions (Kooij et al., 2019). With teachers and parents looking to mental health providers for support, it is important to understand the knowledge and perceptions of those who can diagnose, treat, and inform about the disorder (Hofer, 2010; Tatlow-Golden et al., 2016) and how effectively such individuals can engage in such processes.

Mental Health Literacy

Over the last few decades, there has been a considerable amount of interest and exploration in mental health through literature (Schomerus et al., 2012). Consistent in literature is a phenomenon termed Mental Health Literacy (MHL). According to Jorm (2015), MHL is one's knowledge of mental illnesses that can help with being able to identify and formulate management approaches to a disorder. Included in this definition are key factors such as recognition of symptoms of psychological disorders, knowledge, and beliefs about causes and risk factors, and attitudes concerning mental health. Sayarifard and Ghadirian (2013) suggest that mental health literacy is an essential factor in helping with the prevention, recognition, and management of mental illness. Early treatment of ADHD has been indicated as likely to alter the trajectory of psychiatric morbidity and, consequently, prevent the occurrence of psychiatric comorbidities such as mood and anxiety disorders (Biederman et al., 2009). Adequate MHL is perceived to be valuable since it can lead to early interventions to address mental illness (Jorm, 2015), because those with mental health knowledge may be more adequately equipped to assist (Sayarifard & Ghadirian, 2013). On the other hand, the outcome of insufficient MHL may be noticed in the inability to recognize or assist challenged individuals with the provision of psychological services (Sayarifard & Ghadirian, 2013). In a study that examined how college students conceptualize mental health, it was found that MHL was low among college students

(Vasquez, 2016). In addition, it was proposed that in the absence of correct definitions, MHL is unobtainable (Vasquez, 2016). This indicates a need to educate and transform the attitudes of students about mental illness through MHL programmes as recommended by Mahfouz et al. (2016). Their study showed that the majority of university students had average mental health literacy, negative attitudes towards individuals with mental health challenges as well as treatment of such disorders (Mahfouz et al., 2016). Since a reduced MHL may affect one's ability to identify and effectively intervene in mental health difficulties (Sayarifard & Ghadirian, 2013), a reduced MHL in the field of psychology may hinder how psychological services are offered. Therefore, it is important that mental health professionals' MHL is explored and for the students to have adequate MHL to equip them in identifying mental health challenges (such as ADHD) and therefore interact in ways that assist the wellbeing of those affected (Hofer, 2010, Murtani et al., 2020, Tully et al., 2019).

Knowledge and Perceptions of ADHD

Although an increase in ADHD literature has been witnessed, most research focuses on primary school teachers' knowledge about ADHD (Ballantine, 2015; Jaye et al., 2020; Pillay, 2020) and caregiver perspectives on ADHD diagnosis and treatment (Ahmed et al., 2017; Berger et al., 2008; Fiks et al., 2013). Due to limited empirical research on the ADHD knowledge and perceptions of psychology master's students, studies that provide meaningful information include studies investigating general perceptions and perceptions of students in the medical fraternity. It has been noted across different studies that knowledge of ADHD and perceptions thereof often vary (Alsuhaibani et al., 2020; Murtani et al., 2020; Tatlow-Golden et al., 2016). The next section addresses some of these different perceptions in relation to specific aspects that make up ADHD knowledge and understanding.

Preliminary and recent research looking to understand medical practitioners' ADHD knowledge and views have seen a consistent belief. It has been observed that although trained in the medical model, which largely attributes ADHD-related behaviour to biomedical causes, findings reflect a proclivity to reference single parenting and often (sometimes prominently) the effect of parenting on children as contributing factors to ADHD (Murtani et al., 2020; Tatlow-Golden et al., 2016). Participants' views about ADHD causes were found to be different from those of some psychologists, who believed that although largely attributable to biological causes, psychosocial factors such as stress and parent mental illness contributed to ADHD (Weyandt et al., 2009). Findings from Murtani et al. (2020), although not described in detail, indicate that most students believed pregnancy problems to contribute to a child developing ADHD. This means that the students believed that complications during pregnancy can result in a child developing ADHD.

A study looking into the medical students' awareness of ADHD found that students believed regular ADHD symptoms to include challenges in sustaining attention, excessive running and climbing in inappropriate instances, having one's attention drawn away by external stimuli, difficulty paying close attention to detail, excessive talking, and challenges waiting for one's turn (Qashqari et al., 2017). Another study found that among primary healthcare physicians, the inability to wait for one's turn and challenges in organising tasks were seen as common ADHD symptoms (Al-Ahmari et al., 2018). Another approach to understanding ADHD revealed perceptions of ADHD to be differentiated in terms of gender. Extensive research into perceptions on the symptoms of ADHD revealed the existence of gender-specific perceptions of ADHD. Girls were characterized as more verbally than boys impulsive and engaging impulsively when it comes to conversations and schoolwork (Grskovic & Zentall, 2010). Additionally, girls

were labelled as moodier, easily bored, instigating disturbance, impatient, stubborn, and having anger when compared to their counterparts (Grskovic & Zentall, 2010). In another study, females were reported to be quieter and more withdrawn than males, who were mostly perceived to be uncontrollable and disturbing (Isaksson et al., 2010) indicating differences in how ADHD manifests within males and females. The findings of the latter study seem to not be far from explanations provided in the DSM-5, indicating ADHD female-symptom presentation to be less overt than male-symptom presentation (APA, 2013). The differences in perspectives on genders often come with respective expectations. For example, a study reported that girls were more likely to initiate drama, while boys were anticipated to inappropriately engage in physical activity (Lawrence et al., 2017). Male ADHD behaviour is more accepted and at times viewed as typical (Ghosh et al., 2019) whereas girls with ADHD were reported to face more bullying than their peers, affecting their relationships negatively (Sciberra et al., 2012).

Literature highlights perceptions of comorbid conditions of ADHD. Externalizing disorders, including ODD and CD, were more associated with the hyperactive and combined presentations of ADHD, and due to symptoms like disobeying the law, these individuals were perceived by the community to be dangerous to themselves and others (Müller & Asherson, 2012) and to be forceful (Silk et al., 2019). Findings on ADHD portrayal in the media indicate that individuals with this presentation are often viewed as offensive, disorderly, and malingering (Müller & Asherson, 2012; Ray & Hinnant, 2009). The inattentive subgroup is reported to be associated with internalising disorders such as anxiety and depression and mostly seen with effects of lack of performance, which results in the affected often viewed as useless and lazy (Bröer et al., 2018; Silk et al., 2019).

Students' Knowledge and Perceptions of ADHD

It has been noted that studies reporting on the knowledge of university students have indicated or found different results. Some findings report ADHD knowledge to be generally high among college students (Cuelo et al., 2017; Langlois, 2020) and others found students to generally have poor to very poor knowledge of ADHD (Murtani et al., 2020; Qashqari et al., 2017) with some concluding that the students' level of knowledge had to be advanced (Al-Ahmari et al., 2018; Alsuhaibani et al., 2020; Norvilitis & Fang, 2005). Psychology master's students provide services such as assessing, treating, and informing research on ADHD. Cuelo et al. (2017) reported that low to moderate levels of knowledge were prevalent in the description and causes of ADHD among a sample of university students. However, findings from Murtani et al. (2020) found that most medical students in their study viewed ADHD to be a developmental and behavioural problem. A study examining ADHD views in China and the United States found that although similar perceptions of ADHD were found across cultures, Chinese students were more knowledgeable about hyperactivity than inattention symptoms (Norvilitis & Fang, 2005). The authors further reported that the students had limited understanding of ADHD subtypes and difficulties identifying them, with only 24% being able to do so. The studies reviewed emphasized the potential need for more knowledge about ADHD among students. Based on reviewed literature, there were differences in areas of knowledge, with some gaps in knowledge and some areas with high knowledge. A similar pattern of varying knowledge about aspects of ADHD was noticed in the findings of another study which reported students' overall knowledge of ADHD to be fair, while in a specific area of ADHD, namely diagnosis, knowledge was found to be low (Alsuhaibani et al., 2020). Park et al. (2018) emphasized the value of the ability to correctly identify ADHD in relation to appropriate beliefs of treatment procedures, and improved

attitudes relating to individuals with ADHD. The study suggests that the ability to identify ADHD enables one to be able to offer relevant treatment.

The limited studies seeking to discover the knowledge of students concerning ADHD also explored students' awareness and knowledge of ADHD (Alsuhaibani et al., 2020), their understanding and attitudes towards ADHD (Murtani et al., 2020), and students' actual knowledge in comparison with their self-perceived knowledge. Hofer (2010) compared three different faculty students (education, medicine, and psychology) on different ADHD knowledge areas, including symptoms, diagnosis, and treatment and management. Hofer (2010) found that generally, psychology students' self-perceived and actual knowledge of ADHD matched up. The study additionally indicated that the students had relatively good knowledge of ADHD treatment options. Similarly, another study which included only students from a single faculty reported that 86% of medical students had awareness of the general best approach to ADHD management (Qashqari et al., 2017). Despite the awareness of treatment options, both these studies together with other recent study findings concluded that generally, health professionals still in training lacked adequate knowledge of ADHD treatment and were ill-equipped to offer patients psychoeducation on decisions about pharmacotherapy or behavioural therapy choices for adult ADHD (Hofer, 2010; Loskutova et al., 2020; Qashqari et al., 2017). The results of a study that assessed postgraduate psychology students' knowledge of ADHD showed that while mental healthcare studies students generally had high levels of knowledge about ADHD treatment options, close to half of the mental healthcare studies students had incorrectly answered when asked about behavioural/psychological interventions (Hofer, 2010). This was echoed in the findings of a study by Anderson et al. (2012), which showed evidence that students had low levels of ADHD treatment knowledge. Similar knowledge gaps were identified in a study by

Alsuhaibani et al. (2020) on medical students' awareness and knowledge of ADHD, where students showed a deficiency in knowledge about which steps to take in assisting a child thought to have ADHD. The findings were consistent with the findings of a study by Murtani et al. (2020), and the inferences of a study by Qashqari et al. (2017), both of which found that generally students were not well-informed about features, diagnosis, and management of ADHD. The researchers elaborated that the sample's lack of knowledge was also evident from the students' perceived confidence in their knowledge (Qashqari et al., 2017). Another study's findings highlight doubt in students' ability to effectively intervene in ADHD cases (LaBelle, 2018).

According to Park et al. (2018), deficiency in ADHD knowledge results in delayed recognition and relevant treatment of ADHD, which leads to significant psychosocial problems. Additionally, Hofer (2010) indicated that the psychology master's students have an impact on individuals with ADHD while working with them and it is important to know, explore, and understand their knowledge of ADHD.

Factors that Influence Students' Knowledge and Perceptions of ADHD

The relatively limited number of studies that directly explored the knowledge of students on ADHD, found perceptions to be influenced by various aspects such as media reporting, relationships with people with ADHD, courses dealing with ADHD, education, and training, etc. (Hofer, 2010; Murtani et al., 2020; Oskamp & Schultz, 2005). Media reports have been shown to influence not only public perceptions (Gilmore, 2010), but those of students as well. Murtani et al. (2020) reported that students preferred to get ADHD information mostly from the internet, followed by a psychiatrist, then books and brochures. Murtani et al. (2020) noted that perceptions of and attitudes toward ADHD tend to correlate with one's environmental norms and

students were reported to have observed how their seniors reacted to ADHD at work and emulated reactions when encountering such cases in clinical settings (Murtani et al., 2020). Professionals, including general practitioners, psychiatrists, and clinical psychologists, are among healthcare providers involved in the management and treatment of ADHD (Hofer, 2010). These professionals have been observed to greatly affect students' perceptions. Findings have concluded that such professionals could gain additional specialized education to see to it that there would be adherence to best practices for diagnosing, evaluating, and treating the condition (Perle & Vasilevskis, 2021). Another study found clinicians to be feeling inept and doubtful when treating patients with ADHD (Miller et al., 2019). Considering these findings, it becomes imperative to understand the professionals' knowledge, opinions, and perceptions of ADHD. Similarly, it is important to understand the perceptions of students who are about to enter such professions and to offer treatment to ADHD patients. Studies report that considering the leading effect knowledge and perceptions have in relation to the evaluation, assessment and treatment of the condition, it is of cardinal significance that those working with individuals with ADHD are constantly well-versed in present-time literature, as outdated literature can be ineffective (Langlois, 2020; Perold et al., 2010). According to some studies, knowledge of ADHD may influence perceptions of the disorder (Godfrey et al., 2020; Youssef et al., 2015), and this affects subsequent interactions with people with ADHD (Hofer, 2010; Lawrence et al., 2017). How students interact with individuals with ADHD is influenced by how they perceive ADHD and the perception has a potential effect on individuals with ADHD. Master's psychology students' knowledge and perceptions of ADHD are important in working with people with ADHD, because it proves to be vital in the processes of diagnosing and treating ADHD.

Perceptions and Stigma of ADHD

Due to ADHD symptoms and manifestations such as difficulties in sustaining attention and remaining focused on a task at hand, individuals with ADHD may come across as disinterested, disorganized, and unmotivated. As a result, people with ADHD may be interpreted as lazy. People with ADHD often interrupt or intrude on others, such as during conversations. This behaviour may come across as forceful, inconsiderate, and rude (Silk et al., 2019). Oftentimes ADHD symptom-presentations are perceived as immaturity, impoliteness, and a character weakness (Godfrey et al., 2020; Masuch et al., 2019). Such perceptions can contribute to stigma around the disorder and studies reveal that individuals with ADHD are at great risk of being exposed to stigma, prejudices, and discrimination (Langlois, 2020; Singh & Wessley, 2015).

Stigma is defined as a characterization of a specific entity so that it is depicted in a devalued manner within a certain social context (Goffman, 2009). Unpacked, the process resulting in stigma often follows a sequence that includes distinguishing and labelling human differences; stereotyping the labelled individual with unpleasant attributes; the group which labelled the stigmatized group divides the two groups by having a separation mentality; stigmatized individuals are met with discrimination and decline in the social ranking (Link & Phelan, 2006). Corrigan and Shapiro (2010) explained that prejudice and stereotypes are cognitive manifestations of stigma, while discrimination is the behavioural manifestation. Types of stigma reported include public stigma and self-stigma (Adriaensen et al., 2011; Mueller et al., 2012; Nguyen & Hinshaw, 2020). Public stigma includes the opinions in a population about persons perceived as different from the rest of the population (Mueller et al., 2012). An article that reviewed recent literature on the knowledge and attitudes of children, adolescents, parents,

teachers, healthcare professionals and the public about ADHD, found that misconceptions about ADHD persist and fuel public stigma (Moldavsky & Sayal, 2013).

Recent research shows that young people have stigmatizing attitudes towards peers with symptoms of mental illness (Lebowitz, 2016). For example, in a study about stigma toward peers with ADHD and depression, findings show that individuals expressed a belief that those with ADHD were more responsible for their actions compared to those with depression (O'Driscoll et al., 2012). These findings were consistent with another study which reported students to have similar perceptions when it comes to disorders, college students have been found to have different attitudes depending on the type of disorder one has (Pousson, 2011). Findings indicated that those without ADHD held great feelings of irritation and anger towards those with ADHD compared to those with depression (O'Driscoll et al., 2012). According to findings from Godfrey et al. (2020), stigmatizing perceptions were found in the domains of hyperactivity and impulsivity. Preference to stay away from individuals with such a presentation has been reported (Meza et al., 2019). While the findings of the already discussed studies highlight negative perceptions of ADHD, more recent studies add more nuance to the general perceptions held by students, highlighting positive perceptions. For example, the findings of a study by Langlois (2020) indicate more positive attitudes, explaining that students who took psychology as a major had fewer stigmatizing beliefs towards ADHD than those who did not take psychology as a major. Consistent with these findings are those elaborating that in university setting(s), students generally have positive attitudes towards the inclusion of those with illnesses (Pouson, 2011; Westling et al., 2013).

Other reports not only reflect public perceptions of ADHD, but highlight the influential role that unsound and negative ADHD knowledge portrayed by the media, plays in perpetuating

negative stereotypes about ADHD (Gillmore, 2010; Worrel, 2018). It has been reported that media can influence the views of audience members so that some parents, for example, have been reported to discourage their children from befriending others with ADHD (Lebowitz, 2016).

Studies have also found that negative attitudes, prejudice, and stereotypes regarding ADHD are often acted upon. Neurotypical individuals were found to habitually stigmatize those with ADHD through isolation and rejection (O'Driscoll et al., 2012). These findings are consistent with recent studies that articulated that due to stigmatizing ADHD symptoms, peers may view those with ADHD negatively and wish to maintain social distance (Meza et al., 2019; Wiener, 2020). Another study found that people with ADHD face ridicule and receive negative attitudes (Nguyen & Hinshaw, 2020). In various areas of life, persons with ADHD reported being subjected to regular stigmatization (Corrigan & Shapiro, 2010) in the form of direct stigmatization and structural stigmatization, which is defined as stigma in the form of a lack of inclusionary measures in schools, workplaces, and healthcare practices (Link & Phelan, 2006; Loedolff, 2019).

Stigmatization by Mental Health Professionals

An increase in evidence of stigmatization by health professionals of people with mental health illness has been reported (Clement et al., 2015; Henderson et al., 2013; Henderson et al., 2014). The phenomenon of stigmatization by professionals of people with mental illnesses is termed associative stigma (Yanos et al., 2017). This kind of stigma can affect all those working in the field of mental health (Natan et al., 2015), resulting in such individuals perpetuating the cycle of exclusion in clinical practice/hospitals and, occasionally, engaging in behaviour that may be reflective of the prejudices that exist in the wider society (Park & Seo, 2016). Stigma and

misconceptions have been reported to serve as barriers to recognizing ADHD (French et al., 2019), and children with ADHD and their parents reported having encountered stigmatizing experiences (Murtani et al., 2020). It has been shown that health professionals may contribute to the development and maintenance of stigma by using stigmatizing terms and psychiatric labelling (Reavley et al., 2014).

Effects of Stigma

The stigmatization of patients results in patients with ADHD receiving fewer technical and exploratory investigations compared to other patients (Adriaensen et al., 2011). Such behaviour can lead to delayed diagnosis or misdiagnosis (Adamis et al., 2019) and inadequate access to information from mental healthcare workers. As such, mental health professionals can be described as barriers to seeking help for a mental health problem and they also hinder acceptance of treatment (Henderson et al., 2014). Kooij et al. (2019) suggested that ADHD stigmatization by healthcare professionals increases the distress of patients with ADHD and can have negative, persisting, and often wide-ranging implications on the individual's important areas of living and functioning (Corvelli, 2019; Lawrence et al., 2017; Mulholland, 2016). Overall, stigmatization can lead to significant emotional stress, and hopelessness, which are often predisposing factors to suicidality (Scambler, 2009; Steele et al., 2022) and ADHD comorbid conditions, depression, and anxiety (Bussing & Mehta, 2013; Speyer et al., 2022).

Literature suggests that patients are not only victims of stigma from others but also have internalized shame about their condition, which can be attributed to having accepted and internalized prejudices from others (Adriaensen et al., 2011; Quenneville et al., 2020). Cited among the effects of the internalization of the negative perceptions of others about a person's own mental illness are low self-esteem, self-efficacy, and self-assurance, as well as general

negative self-image (Mashiach-Eizenberg et al., 2013; Picco et al., 2016). Nguyen and Hinshaw (2020) explained that ADHD stigma can have destructive effects on self-esteem.

In this light, it seems evident that psychology master's students ought to be aware of the realities of stigmatization patients with ADHD face so that they can remain empathic and understanding while working with these patients.

Summary

ADHD as a construct has different conceptualizations around the world that influence how it is viewed. This chapter aimed to offer an overview of the knowledge and perceptions that exist about ADHD. The overview showed an increase in the clinical prevalence of ADHD and literature on people's knowledge and perceptions of ADHD has also seen a rise. However, it is clear in the review of literature that an integral piece is missing in the literature. There is a gap in literature addressing the knowledge and perceptions of university healthcare professionals/students who offer ADHD diagnostic and treatment services. Although these students receive education about ADHD, there are still some indications of gaps in ADHD knowledge of professional psychology students. This knowledge gap has been seen to not only affect students' ability to effectively help patients in need of mental health services but also contribute to the perceptions that have been reported to be stigmatizing. Some studies have explained stigma to play a role in exacerbating other psychosocial problems of patients, leading to delays in diagnosis, and generally serving as a barrier in seeking treatment for ADHD. Based on the literature overview, it is clear that exploring students' outlook on ADHD is warranted.

Chapter 3: Research Methodology

Introduction

This chapter offers a detailed description of the research methodology employed in this study. A qualitative research approach was used. Special attention is given to the outline of the research design, sampling process and techniques, the process of data collection and analysis, as well as ethics considerations pertaining to this study.

Research Approach and Design

This study followed a qualitative research approach. It is a type of social science research that collects and examines knowledge about a given problem to gain an understanding and find meanings and relationships between contextual factors (Maree, 2010). It also helps to understand social life through the study of target populations or locations (Punch, 2013). It is the observations and interpretations of people's perception of different events, and it takes a snapshot of people's perception in a natural environment (Gentles et al., 2015). The researcher was interested in the exploration of the knowledge and perceptions of the psychology master's students at the NWU of ADHD. These students were enrolled for a master's degree in clinical, counselling, or research psychology at the NWU. As such, a qualitative approach was considered appropriate for the study as it made it possible for the researcher to explore different individual views on the topic under investigation (LoBiondo-Wood & Haber, 2014) and to discover knowledge and perceptions (Creswell & Poth, 2016). As a rule, qualitative research is fundamentally exploratory in that it sets out to describe and understand a particular social phenomenon (Gagliardi & Dobrow, 2011).

An exploratory research design was used in this study. Djamba and Neuman (2006) indicated that exploratory research design is employed to investigate problems that are not

clearly articulated. It allows for better knowledge and understanding of current problems. Exploratory research is the preliminary study of an unfamiliar problem about which the researcher has little or no knowledge. This type of research develops starting insights and suggestions and provides direction for further research (Reiter, 2017). Since there is limited evidence and literature with a specific focus on ADHD knowledge and perceptions of master's students in psychology, exploratory research was used. Furthermore, since the aim of the study was to explore the students' knowledge and perceptions, exploratory research design was best suited to address the overarching research aims of the study.

Population and Sample

According to Wilson and MacLean (2011), a population refers to a group that a researcher is interested in exploring, or, as Banerjee and Chaudhury (2010) formulated it, a group that contains aspects of what the researcher is looking to investigate. In this study the target population were NWU psychology master's students who were enrolled at all three NWU campuses (Mafikeng, Vanderbijlpark, and Potchefstroom).

Sampling Procedure and Sample Size

The researcher adopted a non-probability purposive sampling technique to select participants following approval from the Health Research Ethics Committee (HREC) and Research Data Gatekeeper Committee (RDGC) of the university. According to Maree and Pieterse (2016) non-probability purposive sampling is a qualitative method used to select participants for the research study due to special inclusion criteria or due to various characteristics of the participant. The use of this sampling method allowed for a specific inclusion criterion to be followed, being that participants in the study had to be psychology students who were at a master's level and studying at the NWU. The researcher focused on

psychology master's students based on the assumption that such a specific group would provide a deeper understanding of the research problem of this present study. The researcher had no associations or relationships whatsoever to the designated prospective participants of the study. The sampling was dependent on the participants' willingness to partake and their eligibility in accordance with qualities prescribed in the study's inclusion criteria. As a result of the sampling process and data saturation, 13 psychology master's students participated in this study.

Sampling Inclusion Criteria

In order to be eligible to participate in this study, participants had to:

- be a psychology master's student enrolled for a master's degree in clinical, counselling, or research psychology at the NWU;
- be fluent and able to read and write in English, as it was the medium of communication during data collection. Participants had to have a command of English because they were studying in English and were knowledgeable in the discipline. They were therefore familiar with the terminology and the interviewer did not need to conduct interviews in different home languages; and
- have access to a smartphone or desktop/laptop and internet access as data were collected in accordance with Covid-19 lockdown regulation.

Data Collection Procedure

The researcher placed a poster with the intention of recruiting participants on various NWU Facebook pages, asked lecturers to post on the NWU eFundi module websites and a mediator to send emails to NWU master's psychology students to ask if they would be willing to

participate. The interested students clicked on a link included on the poster, leading students to a detailed form that requested their names, email address, and contact details. After indicating their willingness to participate, the researcher then telephonically contacted the participants who indicated that they wanted to participate and explained the aim of the study. After questions pertaining to the research had been answered to the satisfaction of the participants, the researcher and participant agreed on a date to go through and sign the consent form prior to the interviews. Participants were given a week prior to signing to evaluate and familiarize themselves with the informed consent form. Once consent had been obtained, convenient time arrangements for the semi-structured interviews (Maree & Pieterse, 2016) were made with the consenting participants.

Martins and Zin (2001) indicated that researchers ought to respect the confidentiality/privacy and anonymity of the participants engaging in the study. To ensure privacy, since the interviews were conducted through Skype, the researcher requested participants to find a quiet and private area in their home/s or any place where they were comfortable and would not be disturbed. The researcher put a “do not disturb” sign on the door and ensured that interviews were conducted in a place (at her home) where privacy and confidentiality were guaranteed. She ensured that there would be no disturbances during interviews by alerting family members beforehand and cautioning against disturbances of any kind. At the beginning of each interview the researcher asked for permission to use a digital voice recorder to retain the data to later be used for transcription.

According to Brink et al. (2006) interviews offer a method of collecting deep and meaningful data and providing a platform for the interviewees to be expressive. A qualitative, semi-structured interview consists of open-ended questions (Gill et al., 2008), which, according

to DiCicco-Bloom and Crabtree (2006), are a collection of arranged questions that direct the interviewers with respect to what they want to know from the interviewed participants.

Although the semi-structured interview typically abides by a predetermined guide set out before an interview occurs and is focused on a central topic to lay out a general structure, the semi-structured interview also grants space for uncovering other aspects and provides room to follow current trajectories as an interview continues (Magaldi & Berler, 2020). As such, although the interview schedule (see Addendum F) aided the researcher of the present study to focus on asking relevant questions and probing in such a way that it would allow participants to answer what was asked, the interview schedule had open-ended questions and was flexible. According to Saunders et al. (2007), the semi-structured interview should bear resemblance to an effortless discussion. The interview schedule assisted the interviewer in ensuring that relevant questions were asked and further aided in the act of probing, which steered the participants to answer what was asked and to provide clarity and elaboration of responses.

Due to COVID-19 and the nationwide lockdown regulations (Sy et al., 2020), the researcher conducted the semi-structured interviews through Skype. A day prior to the interview the researcher contacted the participants to remind them of the scheduled appointment for the following day. The researcher made a point of preparing by going through the research questions of the study, the aims, and reading through the interview questions stipulated in the interview schedule.

Prior to the interviews the researcher asked the students to provide biographical information to have a better understanding of their context. At the start of every Skype interview the interviewer emphasized that participation was voluntary and explained that the participants' information shared during the interview would remain confidential. The researcher also

explained how the interview would transpire in terms of the interview asking the participant seven questions and possible follow-up questions.

The researcher eased the participants into the interview by creating a space of comfort that is informed by rapport building between the researcher and participants. This was done to create an encouraging platform for participants to feel free to express themselves. The researcher also asked basic and general questions to start with to ensure that participants felt at ease and only then moved to the specific open-ended questions that allowed for the participants to engage in deeper thinking and expansion of responses. The researcher probed the participants when there was a need for clarification or elaboration. The participants were able to expand with detail on their responses about their knowledge and perceptions of ADHD. The researcher considered the possible harm and took steps to prevent subjecting the participants to unnecessary harm (Allen & Babbie, 2008). Prior to the interviews, the researcher considered means to minimize the possibility of psychological harm and discomfort that participants could encounter during the process of data collection. To minimize such risks, the researcher continuously explained the importance of confidentiality to participants throughout the course of the study, and the researcher made known to the participants the willingness of the researcher to refer participants who may have experienced psychological harm after having participated in the study to a psychologist based at the ADC, for assistance.

Following each interview, the researcher reiterated that the information given by the participants during the interview would remain confidential. Additionally, the researcher asked the participants if they had any questions so that the participants could have clarity if needed about their participation in the study and the study itself. Furthermore, the researcher used the last few minutes of the interview to debrief and seek clarity on whether the participants felt

uncomfortable during the interview and if they would need the services of a psychologist from the Academic Development Centre (ADC). The average length of the semi-structured interviews was about 40 minutes; however, depending on the students-researcher interaction, some interviews were shorter or slightly longer. Throughout the course of the interviews, the researcher used a voice-recording device as consented to by the participants to save the communication. The researcher immediately saved the audio recording of each interview and proceeded to secure the recordings with a password to ensure confidentiality of the data collected. After each interview, the researcher transcribed and stored the data on a password-protected computer only accessible to the researcher. Participants were assured that the interview transcripts could not be linked to a particular student as all participants' transcripts were assigned codes, using letter coding for identification purposes. Codes that were used included participants A, B, C etc. to ensure that participants remained anonymous. Participants were assured that only the researcher, co-coder, and supervisor(s) involved in the research project would have access to the data.

The private individual Skype interviews offered elements of efficiency and convenience in the conversations which may have not been possible with face-to-face interviews on campus given the time constraints and consideration of the national lockdown regulations put in place at the time of data collection. The nature of semi-structured interviews allowed for a conversation to be steered towards the direction of the participants' views. The interview schedule allowed the psychology master's students to articulate their knowledge and perceptions of ADHD. As such, the researcher was able to not only gather data that was specifically focused on the topic at hand, but to also engage and gain new information as put forth by the participants about knowledge of ADHD and perceptions held. This process resulted in new and relevant identified themes and

allowed for further understanding of the knowledge and perceptions of ADHD as held by the master's students.

Data Analysis

Patton (2014) asserted that qualitative analysis is aimed at changing the collected data into findings. Thematic analysis was used to analyse data. Braun and Clarke (2006) defined thematic analysis as a method used to identify, analyse and report patterns or themes within data. It involves the researcher closely examining data and describing it in detail (Braun & Clarke, 2006). With thematic analysis, the researcher can identify various themes from the initial data to shape the findings of the study (Maree & Pieterse, 2016). Braun and Clarke (2006) elaborated that a theme should represent a significant element of the data in relation to one's research and further maintained that it is important for the researcher to maintain a flexible stance in the use of knowledge, to determine what a theme is within the data set. Braun and Clarke (2006) have outlined six phases of conducting thematic analysis: familiarizing oneself with the data, generating initial codes; searching for themes; reviewing themes; defining and naming the themes and report writing. Thematic analysis specified steps were carried out as follows:

Familiarization with the Data

According to Braun and Clarke (2006), data collected from the interviews should be transcribed verbatim. The researcher familiarized herself with the data by listening to the audio recordings and writing the contents of the voice recorded interview verbatim. After transcribing the interactions, the researcher continually went through the data by reading and re-reading the transcripts. The researcher read through the data from the individual transcripts numerous times to get an overall understanding of the data collected pertaining to the master's student knowledge

and perception of ADHD. The co-coder separately read through the transcripts to become familiar with the data collected from participants.

Generating Initial Codes

In this stage, the researcher generated a list of ideas from the data. The researcher created initial codes. According to Clarke and Braun (2013), a code is a brief sentence or word that captures the essence of the data. The researcher generated the initial codes by engaging in a process of line-by-line coding and highlighting text for extraction as suggested by Williams and Moser (2019). The production of the initial codes was informed by the identified significant aspects or features in the data that the researcher found compelling. Each highlighted text extract was collated within a specific code.

Searching for Themes

Following the coding of the data, the researcher engaged in a process of organizing various codes. The researcher identified themes from the coded data. All the data extracts that were coded and grouped into themes were collated. The researcher, who played the role of an analyst, analysed the codes and the contents and meanings of the codes and formulated an overarching theme that was reflective of all the codes combined. The researcher formulated and arranged the data into themes and divided some themes into subthemes.

Reviewing Themes

After the potential themes had been identified, the researcher further engaged in critical thinking and analysis of the collated extracts for each theme by reviewing and challenging the evident patterns. In reviewing themes those that were noticed to be broad were broken down into various subthemes to elaborate specific elements. The themes and sub-themes were re-evaluated

against both the coded extracts as well as the actual transcripts. This was done to ensure that the themes offered a true representation of the data and gave a well-founded account of the participants' knowledge and perceptions. The researcher, while analysing, realized that certain extracts of data were more suitably placed under an already existing theme and so fittingly moved data extracts and appropriately changed names of themes. The themes identified by the co-coder and researcher were compared and common conclusions with respect to the themes were drawn.

Defining and Naming Themes

Following the step of reviewing the themes, the themes were defined, clarified, and named (Braun & Clarke, 2006). The specifics of each theme were noted to identify the core or gist of what each theme is about and to see that each theme conveys the overall narrative by looking at what aspects of the data correlated with the theme assigned.

Report Writing

Lastly, the researcher wrote the findings in the form of a report to allow for comparisons with existing literature and to effectively describe the data. The report presents the detail and the narrative of the collected data.

Trustworthiness of the Study

Establishing trustworthiness in qualitative research is viewed as important as it highlights that findings and data interpretations are accurate. To ensure the trustworthiness and rigour of the study, the researcher has to ensure that four strategies of evaluating trustworthiness in accordance with Lincoln and Guba (1985) as adapted from Shenton (2004), are followed. These include credibility, transferability, dependability, and conformability (Lincoln & Guba, 1985).

Credibility

Credibility has to do with the value of findings and depends on the honesty and integrity in the carrying out of research. It has to do with the confidence, genuineness, and the accuracy of the study and, therefore, its findings (Polit & Beck, 2014). Credibility was ensured by providing a deep interpretation and understanding of psychology master's students' knowledge and perceptions of ADHD. This includes the accurate and honest representation of multiple aspects of the research. The researcher ensured that the participants were indeed representative of what the study required. This was done by recruiting only the desired sample for participation in the study. The researcher adopted suitable research methods and clearly articulated the subject of the study. Furthermore, the researcher was explicit as it pertained to her role and responsibilities in the study and ensured respect for participants while creating an open space for sharing of knowledge and perceptions.

Transferability

Transferability refers to the ability of findings to be transferred to various contexts with a different set of respondents (Lincoln, 2010). The researcher clearly described with accuracy and adequate detail the context of the study to enable the reader to decipher whether the findings of this present study can be useful and applicable to another context with different respondents.

Dependability

Dependability means that the research findings will remain consistent and that such findings can be repeated (Lincoln & Guba, 1985). The researcher ensured dependability by making audio-recordings to capture the data collected during the data collection process.

Additionally, the researcher strived to provide a level of dependability by explaining the procedures and description of the methodology undertaken in this current study.

Confirmability

Confirmability means that the research findings are adequately supported by the data collected and that the findings are objective, allowing the findings to be confirmed by another researcher (Lincoln & Guba, 1985). Confirmability was ensured by keeping all the transcripts and ensuring that the data are recoverable and easily accessible. All the quotes and excerpts were taken verbatim from the interview transcripts, thus bearing testament to what had been stated by the participants. Confirmability also entails the absence of bias during the research process and the representation of findings. To further ensure confirmability the researcher strived to remain neutral when managing and analysing data by seeing to it that only information from the participants was considered when producing the findings on NWU psychology master's students' knowledge and perception of ADHD.

Summary

In this chapter, the researcher discussed the research approach and design employed in this present study. The researcher explained the sample criteria and data collection procedure followed, as well as the research instrument used to collect data from the participants. The data analysis procedure was also addressed. Lastly, the researcher explained how the trustworthiness of the research was established and considered the ethics of the study. The subsequent chapter (Chapter 4) presents and discusses the findings.

Chapter 4: Analysis of Data and Presentation of Findings

Introduction

This chapter presents the study findings from the individual interviews. A thematic analysis was carried out to identify themes and subthemes from the data. The chapter starts with the demographic profile of the sample that participated in the study. Following the demographic profile, the themes and subthemes are presented in table form. A detailed description of each theme and subtheme then follows, supported by verbatim extracts from participants' responses.

Description of Participants' Demographic Profile

This section gives the demographic profile of the participants who partook in this study. The study comprised of 13 participants (n=13) who were all enrolled for a master's degree in psychology at the NWU. The study participants were from the Mafikeng and Potchefstroom campuses of the NWU respectively, with no participants from the Vanderbijlpark campus as there were no indications of interest to participate in the study. Although the participants were either in their 1st or 2nd year of the master's programme, most of them were 1st year students (n=8). The first year typically involves coursework and some practical exposure, while the 2nd year is an internship mostly based on practical work. Of the 13 participants, 11 were enrolled for clinical psychology, one for counselling and the other one for research psychology. Their age ranged from 24 to 35 years, with 25 years being the most frequently reported age. Furthermore, the study had more female participants than male participants, with 10 females and three males. Most students were from the Mafikeng campus (n=10), followed by Potchefstroom campus (n=3). The table below (Table 1) provides a summary of biographical characteristics of participants.

Table 1*Demographic Data of Participants.*

Participants	Age (Y)	Gender	Classification of psychology	Master's level	Campus
Participant A	28	Female	Clinical	1	Mafikeng
Participant B	25	Female	Clinical	1	Mafikeng
Participant C	28	Female	Clinical	2	Mafikeng
Participant D	25	Female	Clinical	2	Mafikeng
Participant E	25	Male	Clinical	2	Mafikeng
Participant F	26	Female	Clinical	1	Mafikeng
Participant G	25	Female	Clinical	1	Mafikeng
Participant H	24	Female	Clinical	1	Mafikeng
Participant I	35	Female	Clinical	1	Mafikeng
Participant J	28	Male	Clinical	1	Mafikeng
Participant K	26	Female	Counselling	2	Potchefstroom
Participant L	25	Male	Research	1	Potchefstroom
Participant M	27	Female	Clinical	2	Potchefstroom

This study intended to explore psychology master's students' knowledge and perceptions of ADHD. As a result of the analysis, six main themes were identified: knowledge and understanding of ADHD; causes of ADHD; behaviours associated with ADHD; students' beliefs about the diagnosis of ADHD; perceptions of ADHD treatment; and students' experiences and feelings about working with people with ADHD. In addition, four subthemes were identified. Table 2 below provides a summary of these themes and subthemes, followed by a detailed description. The verbatim responses of participants are indicated in the form of direct quotes as representations of their own voices. These quotes are written in italics. For the purposes of confidentiality, participants are referred to as Participant A (PA), Participant B (PB), etc.

Table 2

Overview of themes and subthemes

Themes	Subthemes
Knowledge and understanding of ADHD	
Causes of ADHD	
Behaviours associated with ADHD	
Students' beliefs about the diagnosis of ADHD	Process of ADHD diagnosis Impact of ADHD diagnosis on patients
Perceptions of ADHD treatment	Medication as first line of treatment of ADHD Psychotherapy as first line of treatment of ADHD

Students' experiences and feelings about

working with people with ADHD

Theme 1: Knowledge and Understanding of ADHD

Participants in this study provided their own understanding of ADHD by highlighting specific features of the disorder. An overwhelming majority of the participants shared a similar understanding of ADHD. This understanding was that ADHD is a developmental disorder involving difficulties with inattention, hyperactivity, and impulsivity, which affect different areas of an individual's life. Interestingly, although the participants seemed to hold a similar understanding of ADHD, the participants placed emphasis on different aspects of the disorder while describing it.

In providing a description of their understanding of ADHD, most of the participants explained ADHD to be a neurodevelopmental disorder, highlighting that it (ADHD) includes a balance of inattention and hyperactivity/impulsive behaviour. This was evident in the response from participant E who stated, *"It's basically a neurodevelopmental disorder, it affects attention, it has hyperactivity and impulsivity...they struggle to focus and become impulsive."*

Participant K seemed to share a similar view by defining the disorder as affecting attention and the sufferer being hyperactive. Participant K explained how attention is affected so that the person finds it challenging to focus on certain things and experiences hyperactivity as seen through being unable to sit still, *"It is difficulty paying attention to certain things or difficulty with hyperactivity for example being very fidgety or forgetting a lot of where you've placed things or difficulty sitting still in a lecture room"*

Some participants in this study recognized the disorder as influencing the individuals' way of operating in different environments, while others indicated that ADHD was frequently noticeable during childhood. This is evident in the following extracts from participants' responses.

"It basically affects a person's holistic functioning such as educational functioning, as well as their home environment, as well as how they can interact with other people" (PB)

"That it is a neurodevelopmental disorder that is usually seen in children" (PH)

Theme 2: Causes of ADHD

The participants' comprehension of causes included several contributory factors. However, among the contributory causal factors, the most frequently indicated was unhealthy pregnancy. This was followed by genetic vulnerability and injuries and head trauma. Some participants were under the impression that an unhealthy pregnancy causes ADHD. The following excerpts from participants' responses allude to this.

"...pregnancy plays a huge role, as well the stress levels and substances that the mother does use during pregnancy." (PB)

"It's basically caused or can be caused mostly because of mothers smoking while pregnant with the child" (PE)

These participants believed what happens during the development of the child while the mother is pregnant plays a role in the child later developing ADHD.

The majority of participants also considered genetic vulnerability to be another causal contributory factor to one having ADHD. This was suggested as the participants offered the

explanation that if the parent has ADHD, the child is also most likely to have it. The following response supports this.

“Most of it could be genetics because if you find a child with ADHD and you check the background of this person you would realize that there was one person with ADHD in the family.” (PF)

Participant J, however, while acknowledging that environmental influences play a role, adamantly believed genetics to be the biggest contributor, as he stated,

“I think the strongest one would be genetics.... So, I know that it runs in families... a lot of people who had ADHD in their childhood will have children who have ADHD, it’s possible.”

A similar response was given by participant A, who stated that,

“genetics could be playing a role obviously in the development of ADHD. Environment, I would say it perpetuate the disorder but mostly I could say it’s because of genetics.”

Participants who alluded to the impact that an individual’s surrounding can have on ADHD, referred to injuries and head trauma. They explained that ADHD may result from having experienced a trauma that would have occurred earlier on in one’s life during the gestational or childbearing process. According to participant A, *“Something had to have happened with the brain either during pregnancy or delivery for one to have ADHD”*. The perception that trauma during birth may cause ADHD was also emphasized by participant D, who stated, *“Birth complications, illnesses and injuries to the child when they were growing up”*.

Conversely, other participants felt strongly that one could develop and show symptoms of ADHD later in life that could warrant a formal ADHD diagnosis after having suffered severe injuries or trauma to the head. According to participant L, *“Obviously things like severe trauma can have an effect as well like if you’re in your mid-forties and you’ve never expressed ADHD and you take a severe blow to the head, you might start to express the criterion for ADHD”*.

Theme 3: Behaviours Associated with ADHD

Participants mentioned several behaviours that they perceived to be associated with ADHD. The majority of the participants emphasized behaviour associated with ADHD to be inattention. Inattention was explained by participant D as the inability to sustain attention to such a degree that it affects one’s ability to complete tasks. This participant stated that, *“With regard to inattention the person will be unable to sustain attention even have difficulty organising tasks, those same tasks they will have difficulty finishing them or sustaining attention while doing them.”* Participant A described inattention in ADHD to come across as being disinterested and stated, *“The person would usually lack concentration. They would appear as if they are not paying attention in class or they are not interested on what’s been said.”*

Participant F specifically explained the challenge to concentrate by explaining that people with ADHD struggle with concentrating and focusing on a specific instruction, *“They’re unable to focus on one thing at a time. If let’s say for example you give them a certain instruction, instead of doing that, they can move from here... because of that they will not be able to focus on that one instruction because they just want to do something else”*

Participant F further alluded to being “easily distractible by external stimuli” as a behaviour observed in ADHD, explaining, *“...they are always distracted by other things. They can’t pay attention because of the external distractions that are there, they just want to do other*

things rather than focusing on what they should do.” Distraction was also highlighted as a behaviour associated with ADHD by participant K, who said, *“With adults if it’s a student...you find yourself distracted in the lecture room, you might think “oh! this person is doing this” or “what’s this person doing?”*

Forgetfulness was also mentioned as a behaviour associated with inattention found in ADHD. The participants indicated the common ways to display forgetfulness to include instances where people with ADHD find themselves forgetting where they would have placed certain items and forgetting utterances. The following responses allude to this.

“There are things like forgetfulness... forget your keys and you don’t know where you put your keys” (PK)

“Even in class such kids would never remember what you said” (PF)

Apart from inattentive-associated behaviours, other behaviours mentioned by participants were associated with hyperactivity/impulsivity. Participants understood behaviour related to hyperactivity found in ADHD to include that the individuals are not at ease, struggle to remain still when seated, and moving hands and feet constantly. According to participant A, *“they can’t sit still, they have to be busy with something almost all the time..., others would fidget, tap their foot or something, busy with their hands”.*

The difficulty to remain seated, constantly doing something, and physical energy and movement was further emphasized by two other participants who explained that not only can these patients not sit still, hyperactivity also entails the individuals engaging in different activities and constantly being on the move. Two participants explained:

“...they would stand up in class and walk around or in a home environment when perhaps the family is eating dinner they would want to stand up and go watch TV” (PB)...

“a lot of that discomfort with sitting still and a lot of energy when they are outside playing and interacting with other kids so typically running around and just being very active, physically active” (PH). According to participant M *“people refer to it as the “Duracell buddy”, they are just always on the go, they don’t stop doing things, there’s never a time where they sit and read a book, that is not gonna suffice with a child with ADHD”*

Lastly, some participants referred to hyperactivity by specifically alluding to impulsivity, with some participants explaining that the behaviour is not thought through and is done in the spur of the moment. This was evident when participant J shared that, *“they will tend to behave in ways that are very impulsive, they’ll do things without thinking. A lot of people would use the words “careless”, “rushed”, “impulsive”, “they don’t think before they talk” ...it’s that inability to kind of stop the behaviour, so they’d rather act than not act and they require that stimulation. So, their actions usually lead towards stimulation”.* Participant M further explained that the behaviour would be hard to inhibit and stated, *“they would also get really excited and not be able to regulate those emotions to come down so it would be inappropriate in terms of the context that they’re in.”*

Theme 4: Students’ Beliefs about ADHD Diagnosis

Participants firstly indicated that the term ADHD is often used without necessarily following the right procedure to assess, check for, and formally diagnose. In general, there was a concern among participants about the use of the word ADHD without a formal diagnosis. According to participant A, *“The word ADHD or hyperactivity, they are just loosely used without full evidence, full assessment to say this it’s ADHD with evidence. So, it’s maybe abused or misused.” (PA).* Participant K expressed much the same sentiment as participant A about the

inappropriate use of ADHD and responded, *“With children I think it’s easy to say it’s ADHD, a teacher can look at a child as a “naughty child” and say he/she has ADHD... just say “oh Sarah is standing up in class and talking...she’s got ADHD”. That’s my thing with diagnosing is that it’s not as easy as it’s made out to be that every Tom, Dick and Harry has ADHD. Find out if a child has ADHD, you should go through the proper channels, go to a psychologist, educational psychologist, any psychologist. Go through the proper channels”*

Subtheme 1: Process of ADHD Diagnosis

Having concerns about the diagnosis process, participants mentioned that the clinical interview was important as clinicians can observe clients’ behaviour during the clinical interview, which adds additional value to the diagnosis process. Participant C stated that, *“I would first have a clinical interview with the client...know how they react and act in different settings, not just one, maybe at school, at home, while playing with friends or other contexts.”* Participant D specifically indicated how the clinical interview created an environment where the student could enquire about the patients’ behaviour and this can guide them in making decisions about the diagnosis. Participant D stated that, *“Questions like “do you sleep a lot?”, “When you are at work do you touch a lot of things all at once?” ... So, during my interview, that’s how I would see that the person has attention-deficit which forms part of ADHD. Usually for me I would see with how the questioning would go” “The interview is the first step for me after getting consent.”* Another participant also mentioned the importance of the interview, *“... Speak to them and find out what happens in school, “what do you like best about school? if you’re sitting in the desk what happens? Do you like sitting at the desk?” ... finding out from them because they’re the ones who are actually feeling this” (PM).*

In addition to the clinical interview, participants also mentioned the importance of the gathering of collateral information. According to participant G, *“It’s more of collecting collateral information...which is more of getting collateral information to get to the significance of ADHD.”* Participant M further explained that it was important to get as much collateral information as possible, *“I would also get lots of collateral information, if it’s children I’d get collateral from parents, I’d get collateral from the school, I’ get collateral from maybe they’ve got an au pair. So definitely collateral information I think that’s one of the most if not the most important aspect to diagnosing ADHD in children. It’s to corroborate what you’re seeing.”*

In addition to the above ways of making a diagnosis, most of the participants in this study believed it was important to use an assessment to check for ADHD symptoms. Participant F stated that, *“You do assessments also to check their attention, their level of concentration “...so there are assessments for ADHD”*. Additionally, two participants further elaborated by mentioning specific assessments and stated:

“... I would use the Conners assessment which is a report. It’s an inventory that you give to the parents and that you give to the teachers so now those are two settings that the child is in. So now you can see if it’s significant of ADHD at home, if it’s significant of ADHD at school and that would then inform my actual diagnosis” (PG)

“As far as I know there is diagnostic tool that you can use it’s called the Conners rating scale and it does look for aspects of ADHD and the likes of ODD and conduct disorder but it’s not the be all and end all, you can’t use that exclusively to diagnose it’s just to see whether there are traits” (PM)

Subtheme 2: Impact of ADHD Diagnosis on Patients

In addition to the process of diagnosis as discussed above, the participants do not only consider following accurate procedures as the only significant aspect, but also take into account the possible effect that a diagnosis may have on patients' lives as participant M expressed:

I think it is quite a diagnosis that changes lives of individuals, and it can't just be thrown around like it currently is. I think that there needs to be a bigger area of consultation and observation before this very big diagnosis and all this medication is given to this child"

Participant C also highlighted that an ADHD diagnosis should come with great consideration and caution. This participant provided an example of how the ADHD label can have an effect on how the diagnosed individual perceives themselves and stated:

"it might play a role in a way that they see themselves, in terms of their self-confidence, self-concept..." "I have ADHD" and may equate that to their own personality or being. Also having taken medication from a very young age they may be stigmatized."

Theme 5: Perceptions of ADHD Treatment

The overwhelming majority of the participants recognized ADHD as needing to be treated and managed. Although the belief that people with ADHD need support and management was consistently evident in the responses of participants in this research, how to go about this process produced diverse responses. The participants described various intervention strategies they would use to assist ADHD-affected individuals. Interestingly, when exploring perceptions of ADHD treatment, majority of the participants immediately responded by stating medication for management. Of the interventions mentioned by participants, the most often employed were

CBT and psychoeducation. The subthemes identified include medication as first line of treatment of ADHD and psychotherapy as first line of treatment.

A strong belief that ADHD should be treated by using both therapy and medication was prominent in the responses of participants. This shared belief was well demonstrated in the response of participant L, who stated:

“I am very pro blended treatment or hybrid treatment, coupling medication where it is appropriate, so in psychiatric treatment using medication when it is necessary, but never in isolation. I don’t think psychiatric medication should ever be taken in isolation. I think it should always be coupled with some form of therapy” (PL)

Participant A and participant K both further elaborated on how therapy and medication together would work. The participants articulated that therapy as offered mostly by psychologists would specifically be targeted at ways to manage behaviour while the medication was specifically explained to function from an internal level:

“I would say my perspective in terms of management of ADHD, it would take both the medication and maybe the therapy combined in managing ADHD. The medication would help with what is happening inside and then the therapy would help with the behavioural part of it” (PA)

“So I would definitely look at treating with pharmacology in conjunction with a therapeutic approach for adults.” (PK)

Subtheme 1: Medication as First Line of Treatment of ADHD

Although many of the participants were of the opinion that combining therapy and treatment was optimal for ADHD treatment, views about which of the two to employ first were

divided. Interestingly, some participants felt that medication should be considered the first line of treatment for ADHD. Among the most frequently mentioned medication was Ritalin, followed by Strattera and Concerta as captured in the responses by participant B and D.

“There’s different kinds of treatment options. Medication..., so what I know is that stimulants are the most effective which is your Ritalin. Also non-stimulants which is your Strattera.” (PB)

“So pharmacology for me it’s good, I’m for it. I literally would be an ambassador for the pharmacology because with ADHD it’s a neurodevelopmental disorder you can’t deal with it without pharmacotherapy. So I think it’s good.” (PD)

While Ritalin, Strattera, and Concerta were frequently suggested as pharmacological options, some participants, however, showed concern about over-medication of individuals suffering from ADHD and medication being administered shortly after having observed behaviour associated with ADHD. Participant E stated that, *“personally I feel that there’s a lot of over prescription especially of Ritalin because if a child comes through with attention problems, what we tend to do is run off to prescribe stimulants . . .”* However, participant D argued that the problem did not lie so much with the over-prescription of medication but rather the incorrect dosage. She explained, *“when it comes to...the grams that they are given...with children it’s a bit too much”*

Furthermore, Participant G acknowledged a change in perception after gaining experience working with people with ADHD and becoming more knowledgeable. The participant mentioned that the dosage of medication prescribed to treat ADHD was often where the problem arose as clearly captured in the following response:

“I used to have this weird view of Ritalin when I was growing up like “it makes children like slower, sleepy” and now that you’re more on the clinician’s side, when you have to be the one who refers I think the one thing I can say about that is the dosage. Sometimes the children are not dosed correctly so they might be given an upper dose and then the implications are really bad so it means they look like zombies, they’re actually not focusing. So those are my views, I mean I changed my views to that what might be the problem is the dosage that is given to a child.” (PG)

Participants also mentioned that parents of individuals with ADHD needed an awareness of the side effects of the medication when incorrectly dosed so that they can decide wisely for their children. Participant B indicated that it was important to *“Try to help the parents in terms of weighing the benefits and risks and just to alert them about the side-effects so that they can make their own informed decision regarding medication.”*

Furthermore, participants stressed the need to inform parents about the medication profile and emphasized that when children take ADHD medication, the process ought to be supervised. Parents should understand that the medication is not to “fix” all the problems. According to participant K, *“it’s not a miracle drug either, you need management, you need supervision, you need responsibility in the management of the child ... you still need to manage it, it’s not a miracle drug that’s just going to “fix” what’s wrong.”*

These accounts clearly highlight that students perceive ADHD medications to be used more often than necessary. Based on the above, medication is perceived to be a preferred choice, but participants did consider that the dosage consumed was frequently problematic and that there should be an awareness and management.

Subtheme 2: Psychotherapy as First Line of Treatment of ADHD

The other school of thought that the participants emphasized was the value of therapeutic techniques. These participants felt that therapy should be considered as the first line of treatment. The participants explained that attempts should be made to engage in therapy with interventions targeted at the ADHD-affected individual's behaviour prior to making use of medication.

Participant J indicated, *"I think psychotherapy, skills before pills always and if worst comes to worst you can use some of the ADHD medication. You know rather understand the kid and assist them than putting them on drugs that make them compliant, that's my opinion."* Among popular therapeutic modalities used were CBT, which was preferred as it was noted to effectively reduce symptoms of ADHD. Participants reported to feel more comfortable with the use of CBT in terms of helping people with ADHD as participants L and M pointed out:

"The most effective type of therapy or intervention for someone with ADHD is based on principles of Cognitive Behavioural Therapy (CBT) which has been shown to help at least at a functional level, it doesn't necessarily do away with the disorder, they still struggle but now they have this self-imposed and self-regulated infrastructure and support to manage that." (PL)

"I would definitely say CBT, I'm more CBT inclined as well but CBT in the sense that it teaches skills. You would obviously have to take into consideration their ability to have that self-awareness of why they're thinking the way they think and to assist that way but CBT in the sense of equipping them with the skills and the toolbox that they will need to go further." (PM)

The participants' responses show that they perceived techniques found in CBT to be effective in assisting the clients with techniques to use in their day to day lives.

Over and above medication and therapeutic intervention, another treatment and management strategy, psychoeducation, was mentioned for those in close interaction with an ADHD-affected person. To help everyone involved to understand ADHD, participant M suggested:

“I think that psychoeducation for the parents is massive. So, helping them to really understand the disorder, to know why medication is necessary, you are not pumping the child full of fake drugs, I’m a huge advocate that children, should they have the ability and mental capability to understand what’s happening, should be explained to”.

Participant E even mentioned explaining scenarios of behaviour that may be expected and perceived to prepare the clients and provide them with what would be helpful:

“So most of the time I would have to do psycho-education... to have predictions on what is going to happen and also I would do psychoeducation on how to manage that...with information and education about what ADHD is and what you should expect and how to actually treat and manage it...so I feel like you would be equipping the patient or the people around them with the resources that they need to deal with it.” (PE)

Participant H highlighted the perceived value of making others aware and involving other people to help maintain a relationship and support the individual with ADHD:

“So, it helps maintain the relationships because of the understanding of the individual affected and those around them and it would give them room for understanding and for peace of mind for themselves. It creates a good environment for the person to have a good prognosis”

Although participants were aware of options for ADHD treatment, some participants expressed that they lacked knowledge about adult ADHD. Others expressed uncertainty about how to best approach ADHD among adults because from their experience, techniques used on children were not as effective when using with adults. Participant K highlighted this uncertainty by referring to how they have been prepared at university level and stated, *“So when we were studying and we learnt a lot about children because it’s prominent in children and you learn these cute and wonderful techniques with children but they don’t necessarily work with adults.”*

The feeling of uncertainty as it relates to treatment of adults with ADHD was expanded by Participant M, who explained how she did not feel completely prepared for the role of providing interventions for individuals with ADHD. She articulated that she felt somewhat prepared with the theoretical knowledge and not so confident in what to do with the knowledge or how to apply it when treating someone with ADHD, *“If we are talking about purely M-preparation that was given in lecturers I could theoretically understand and attempt to implement but I would not feel a 100%. So theoretically I’ve got the knowledge but application is so different to theory... I can’t with 100% certainty say that this is the right thing to do and the right procedure to follow.”*

Participant M further elaborated on what they would do to feel more confident and prepared to work with someone with ADHD by indicating that, *“let’s say you told me “I have a child for you to go and work with tomorrow”, I would not be like “oh okay cool can chill tonight and see the child tomorrow.” Absolutely not, I would definitely do a lot of consultation of resources and I would also seek supervision because I know it’s not an area I’m competent in as of yet.”*

Participant K alluded to seeking more knowledge in specific strategies to employ with adults who have ADHD. This was evident when the participant stated, *“Having better tools for adults with ADHD. So maybe being exposed to various tools for adults. Yes, I did my own research eventually but if I had to say going into it, having a bit more tools...”*

Even though the above accounts explain that most of the participants do not feel adequately equipped with the knowledge and skills to effectively manage ADHD-affected clients, some participants felt strongly that they were confident in their ability to effectively treat ADHD. In this regard participant E proclaimed, *“My confidence was good because most of the time I would be creative whenever I did psychoeducation with the parents and behavioural therapy, plus I had supervisors so I was pretty confident.”*

Theme 6: Students’ Experiences and Feelings about Working with People with ADHD

The findings illustrated that some of the participants in the study experienced working with individuals with ADHD as overwhelming. The experience was continually described as “hectic”, “overwhelming”, and “draining”. A statement made by participants J is reflective of the above claim when he stated, *“So I must admit it’s quite overwhelming. They are full of energy and their inability to actually focus on anything is quite hard on any professional working with them.”*

Most of the students who felt overwhelmed by working with ADHD clients identified struggles with doing assessments and therapy. Participant C and participant F explained this sentiment widely shared by participants by saying that:

“It was overwhelming...So it would be very overwhelming for me to work with them, because conducting an assessment, literally sitting down with them it’s hard for them to even pay attention so they become very distractible during assessment time.” (PC)

“I don’t think I have a good experience of working with an ADHD child, it’s almost impossible to work with them. You have to also do assessment with them so it’s hectic.” (PF)

Describing at length the challenge that comes with working with ADHD-affected individuals is a response by participant D, who further articulated:

“It was very hectic because you are dealing with a child who doesn’t even listen to their own parent and now here I was as a stranger and this child is supposed to listen to me. So, it was very hard to develop rapport with the patient or even try to develop any kind of relationship with the patient to trust you because here I was trying to make sure that I develop rapport and this child is not listening to me, this child wants to stand up and leave, or this child is looking above me, literally being all over. So, it was very hard to work with the child, it was a very draining process.”

While some participants perceived the challenge as draining, participant A perceived the challenge to be exciting and encouraging, stating that, *“it would push me outside the comfort zone. It would just be challenging but in an exciting manner”*.

In the light of feeling challenged, participants had a consistent perception they were required to maintain a calm demeanour with ADHD clients. Participant A explained that, *“I would say it would be challenging because one would need to stay calm themselves”*.

Participants also recognized and added that it was important to understand behaviours such as

limited concentration span and hyperactive behaviour that come with the disorder. The following responses highlights this:

“So, it takes a lot of patience. You have to be patient with this child, they’re not trying to irritate you, they’re not trying to be disruptive it’s just that their brain cannot do it.”

(PM)

“I would have to be quite patient. I would have to understand that they are not, in terms of concentration and hyperactive behaviour, at the level of the average child. I’d have to take that into consideration...So just being patient with them and taking it very slow would be very vital.” **(PB)**

Some participants had ambivalent experiences working with people with ADHD. The participants perceived it to be nice to work with some patients with ADHD and tiring to work with others. Students generally described ADHD-affected patients as more tiring for the student psychologists if they exhibited behaviours such as being in constant physical movement compared to those who show another symptom such as excessive talking. This experience was echoed by Participant K, who stated, *“So some were very difficult and draining and others were okay... some clients were really lovely and you could work with them and it wasn’t too difficult...”*

Participant G concurred with the experiences being different and alluded to this and further elaborated on the experiences by specifying, *“It would depend because sometimes if they’re talkative then it’s a nice experience. If they’re talkative then at least you’re getting where their mind is at. If they’re too fidgety and want to walk around and you’re trying to stop them it gets you to a point where the breaks are also needed for yourself.”*

Looking at the experiences of the participants and how they feel about working with people with ADHD, the experience that participants had in working with people with ADHD was explained as changing one's views about the disorder. One participant explained a change in perspective following the experience with someone with ADHD. The participant noticed that symptoms were not as noticeable as expected, therefore changing the participant's personal perception. Participant B reflected as follows, *"It wasn't how the media depicts people with ADHD. Yes, you can see symptoms here and there...so it wasn't as hectic... Yes there were times maybe a week or two when she wasn't on medication and the symptoms would be much more prevalent such as the excessive talking, constantly fidgeting, wanting to walk around, and losing her train of thought."*

This sentiment of a change in perception following the experience of working with ADHD-diagnosed individuals was echoed by participant H as evidenced by her response when she stated that, *"it was quite mind opening to see how it's not like they're completely different, you know a lot of people think that a person with ADHD you will see physical defects or that something's wrong with the kid but they are just normal kids. Only when you really observe and pay attention then you pick up certain things that they do"*. Furthermore, participant K alluded to a change in perception specifically about the prevalence of the disorder among students, *"I got to see a lot of untreated ADHD and that was quite interesting to see. Surprisingly a lot of students struggle with it, it's not just one person, I saw quite a few students who had ADHD... it's actually more common than I thought."*

Conclusion

This chapter provided a thematic analysis of data collected in this study. The analysis painted a picture of the knowledge and perceptions of psychology master's students. The results demonstrated that participants had a sound understanding and knowledge of ADHD and behaviours patients show. However, the results also highlighted some lack of understanding and uncertainty concerning the management of ADHD. The next chapter discusses the results of this study relative to the literature reviewed.

Chapter 5: Discussion

Introduction

The results and data analysis were described in the previous chapter (Chapter 4) and this chapter discusses the findings. The discussion aims to illuminate and integrate significant findings of this study, allowing for better understanding of the psychology master's students' knowledge and perceptions of ADHD. Additionally, it includes a consolidation of the results with existing literature, and identifies similarities or discrepancies between the present study and previous related literature. Student(s) and participant(s) are used interchangeably in this chapter.

Psychology students encounter various clients and individuals with behavioural disorders in practical or research settings, including ADHD. However, some aspects of ADHD seem to not be as clearly understood as others. This exploration resulted in a number of findings that provide insights and add to the limited existing research base of ADHD knowledge and perceptions. The findings from this study suggest that in general, the students possess a thorough understanding and overall knowledge of ADHD and its associated behaviours. The students' perceptions of working with individuals with ADHD indicated notable contrasts, with some students having enjoyable experiences while for others the experience was overwhelming. Although the students displayed knowledge of ADHD and how to diagnose it, they expressed a desire and need for further knowledge as it relates specifically to ADHD treatment. The specific themes and subthemes that were identified, are now discussed.

Theme 1: Knowledge and Understanding of ADHD

This theme reflects the knowledge and understanding that the psychology master's students had about ADHD. The findings indicate that the students in this study had a comprehensive understanding of the concept of ADHD. That is, the students understood ADHD to be a neurodevelopmental disorder. Similar perceptions of the conceptual understanding of ADHD were found in a study conducted by Murtani et al. (2020), who sampled medical students and found that students understood ADHD to be a childhood developmental and behavioural problem and/or disorder. This similar understanding between students is likely influenced by the fact that the students from both the present study (psychology students) and comparative study (medical students) predominantly use the DSM-5 as the main nosology when learning about mental disorders. ADHD is listed as a neurodevelopmental disorder in the DSM-5 (APA, 2013). Additionally, in the descriptive understanding and knowledge of ADHD, the findings illustrate that students regarded the disorder as common in children. Richardson et al. (2015) also came to a similar realization and described ADHD as a predominant childhood disorder. Additionally, the findings of the present study revealed that a prominent focus in the description of ADHD was main behaviours such as impulsivity, inattention, and hyperactivity. This understanding of ADHD is similar to the one provided by Mowlem et al. (2019), who understood ADHD to be identified by hyperactive/impulsive and inattentive behaviours. This understanding is corroborated in the DSM-5, which indicated ADHD to be characterized by inattention, hyperactivity, and impulsivity (APA, 2013). Furthermore, the students also described ADHD to have a noticeable impact in areas such as academic performance, home environment, and general social interactions. Based on the results of this study it appears that the students' understanding of the concept of ADHD was consistent with descriptions articulated in the literature.

Theme 2: Causes of ADHD

Causes of ADHD featured in the data set and the participants held beliefs that considered several factors to be possible causes of ADHD. The latter was expressed in a study by Mirabella (2021), who indicated that ADHD appears to have an array of aetiologies and cannot be associated with a solitary component. First, the findings of this study revealed that students believed genetic vulnerability to have an aetiological influence in ADHD as they stated that if parents or a parent has or had ADHD, it increases the likelihood of the child to also have it, as the disorder runs in families. This corresponds with a study by Demontis et al. (2019), where genetic makeup was found to show undeniable influence on the presence of ADHD. Although the study highlighted that genetic risk variants influence ADHD, the study explained that the combination of various genetic variants expands the risk of having ADHD (Demontis et al., 2019).

Findings of the current study further indicate that students held a belief that indicated the aetiology of ADHD to be attributable to an unhealthy pregnancy. The students regarded an unhealthy pregnancy to be one characterized by challenges such as illnesses and stress or where the woman smokes. This underpins the results of the study by Kacharava et al. (2022), who found an association between stress during pregnancy and the presence of ADHD symptoms in offspring. Consistent with the present study results, findings from the study by Murtani et al. (2020) indicate that most university students believed pregnancy problems to play a role in ADHD. This aetiological perspective serves as an important understanding and could inform others of the possible outcomes of an unhealthy pregnancy. Additionally, this understanding could influence pregnant women to strive for a healthy pregnancy as much as possible. However, although not directly mentioned by the students, the researcher noted in literature a prominent

trend to lay blame on women raising children with ADHD. Studies addressing this aspect have highlighted the burden that is often laid upon parents' shoulders, particularly the mother, who is implicated as the person responsible for ADHD because of an unhealthy pregnancy. The perception is that ADHD is the "parents' fault" due to for instance the mother's stress during pregnancy (Manzari et al., 2019), illnesses during pregnancy (Walle et al., 2022), smoking during pregnancy and own genetics (Martel et al., 2022). This perception overburdens the parent with feelings of guilt due to the interpretation that their unhealthy pregnancies is a major possible cause of ADHD (Sheeny et al., 2021).

Furthermore, literature shows that perceptions of parenting and child-rearing practices have a causal effect on children's ADHD-related behaviour (Shah et al., 2021; Tatlow-Golden et al., 2016). The parents are often perceived to not reprimand their children's behaviour and prior to being given a formal diagnosis, which came with some relief, parents were reported to have often felt incapable of disciplining their children (Wong & Wong, 2021). As such, parents have been reported to experience stress, anxiety, and depression because of the stigmatization that comes with being a parent of a child with ADHD (Charbonnier et al., 2019; Leitch et al., 2019). Promisingly, the students in the current study did not display the views indicated above, and in fact, although briefly, indicated an awareness and consideration of the impact of this perception on the parents. They expressed empathy for the parents. This is particularly important, considering that literature advocates that understanding what people with ADHD and loved one's experience in terms of stigma is paramount to reducing stigma towards them and creating an environment that is receptive of the individuals (Flanigan, 2016). Considering that the psychology master's students are also responsible for informing others of the all-round nature of ADHD, this finding seems specifically relevant and important. Literature has reported that these

parents of children with ADHD tend to self-stigmatize as they experience negative feelings about having a child with ADHD (Charbonnier et al., 2019).

Among other causes, the results of this study indicated that students believed that ADHD could develop after birth. In effect, findings from the study highlighted that students identified the environment as an explanation for ADHD behaviour manifestation. Specifically, the participants expressed the belief that injuries and head trauma could also be a cause of ADHD. In line with these findings, Asarnow et al. (2021) argued that severe traumatic brain injury (TBI) places one at an elevated risk to present with symptoms indicative of ADHD. The findings further specified that this correlation between severe TBI and ADHD is witnessed as resulting in more ADHD diagnoses as compared to incidences of ADHD diagnosis where trauma did not preface the diagnosis. Stojanovski et al. (2019) found greater symptom severity among youths who had TBI as compared to ones who have ADHD without having experienced TBI.

The findings of a study by Núñez-Jaramillo et al (2021) were supported by the findings of the current study in that the causes of ADHD were perceived to be as a consequence of a number of factors. Núñez-Jaramillo et al. (2021) further elaborated in their explanation that the cause of ADHD is heterogeneous and connected to gestational, perinatal, and genetic elements. The findings therefore suggest that the student's beliefs about causes of ADHD bear resemblance to general representation of ADHD aetiology in literature.

Theme 3: Behaviours Associated with ADHD

The findings of this study indicated that students demonstrated an understanding of the different symptoms one presents with when having ADHD. The results suggest that the master's students viewed behaviours associated with ADHD to be inattention-related behaviours. That is,

findings demonstrated that master's students most identified behaviours such as an inability to sustain attention, struggling to focus, and being easily distracted by external stimuli as typical behaviours as a result of inattention in ADHD. Similarly, inattention is explained in the DSM-5 to manifest itself in various ways including difficulty focusing, being distracted, and wondering around (APA, 2013). The present study findings are similar to findings of the study conducted by Alsuhaibani et al. (2020), who found that among the most common symptoms of ADHD identified by students in their study was being easily distracted by external stimuli. Additionally, forgetfulness was also among the recognized behaviours by the students in this study. Students indicated that individuals with ADHD often misplace keys and do not remember certain things. Chaplin and McCarthy (2018) explained that forgetfulness was often seen in ADHD as affected individuals forget to perform certain tasks at specific times. Furthermore, students considered behaviours such as fidgeting, not being able to sit still, and acting without thinking things through to constitute the hyperactivity/impulsivity found in ADHD. This answer is consistent with the empirical literature available today, which explains hyperactivity and impulsivity in ADHD to involve having excessive motor energy, fidgeting, being restless, and excessive talking, which are deemed as often occurring at inappropriate settings and times (APA, 2013).

The present study findings concur with findings of Langlois (2020) in that students portray knowledge about ADHD-related behaviour. The researcher explained that to examine students' knowledge of ADHD in their study, they employed an adapted version of the Knowledge of Attention Deficit Disorders Scale (KAADS) (Mulholland, 2016). The scale is commonly used to assess the knowledge that a population has about ADHD. The scale provided a questionnaire with different questions about ADHD with options to answers being "True",

“False, and “I don’t know”. Langlois (2020) found evidence suggestive of students being knowledgeable about ADHD-related behaviour.

The students in this study were knowledgeable about and able to recognize inattention and/or hyperactivity/impulsivity as main symptoms of ADHD as per DSM-5 requirements (APA, 2013). Additionally, based on responses provided, the students seemed knowledgeable about inattentive behaviours and hyperactivity behaviours. This may possibly have been influenced by some of the students’ personal and even professional experiences and encounters with individuals with ADHD. Another probable cause underlying this result is that the students, being master’s students in psychology, were taught about these behaviours as they are central to the understanding of ADHD. Based on the findings of the study, it is evident that students understand ADHD-related behaviours.

Theme 4: Students’ Beliefs about the Diagnosis of ADHD

The findings indicated that students believed that the labelling of people as having ADHD while not having been officially diagnosed, to be a problem and inappropriate. Students felt that ADHD was used loosely without evidence of a professional diagnosis confirming the existence of the disorder. For example, students indicated that some teachers classify “naughty children” or children who stand up in class as having ADHD. The students’ assertion underpins the results of the study by Simoni (2021), who argued that some teachers have been known to inappropriately term children as having ADHD. The students believed that the term ADHD was overused to describe certain undesired behaviour but that the behaviour may not necessarily warrant a formal diagnosis by a professional such as a psychologist. The findings indicated that students believed that a professional such as a psychologist should be the one to offer an official diagnosis of ADHD and not a teacher or parents after having observed a child as misbehaving

and labelling them as having ADHD. Similarly, Schoeman and Liebenberg (2017) indicated that ADHD is usually diagnosed by a psychologist or a medical practitioner. Literature emphasizes that the diagnosis of ADHD can only be done by a clinician who engages in patient and/or caregiver interviews to detail criteria for ADHD (APA, 2013; Faraone et al., 2015). Students' beliefs about the diagnosis of ADHD were one of the more extensively occurring themes across the students as substantiated by below identified subthemes.

Subtheme 1: Process of ADHD Diagnosis

The students perceived the process of diagnosis by a student psychologist to be one that entails multiple procedures, including a clinical interview where students mentioned how they would observe clients' behaviours and ask questions that are targeted at understanding the behaviour manifestation and to evaluate if one indeed meets the criteria for ADHD. According to Schoeman and Liebenberg (2017), the clinical interview is a fundamental part of the process of assessing for ADHD. Among some of the important aspects noted are developmental history, questioning about history of psychopathology and psychotherapy and current and previously used medications (LaFrance et al., 2020).

Findings further indicated seeking collateral information as part of the processes of ADHD diagnosis. The students highlighted gathering more information about the clients' behaviours by speaking to and getting reports from specific individuals, such as parents and the schoolteacher. Unsurprisingly, acquiring collateral information was among the most highlighted across students. The reason is that the people in environments such as the home and school spend a lot of time with the person suspected of having ADHD. Additionally, according to APA (2013) diagnostic criteria, ADHD manifests itself across multiple settings such as the home, school,

work environments. The environments were perceived by students as ideal contexts within which symptoms of ADHD may be observed and viewed as providing pivotal and insightful information relevant to the process informing diagnosis of ADHD. As such, acquiring collateral information was viewed by students as a way to check or confirm the existence and severity of the ADHD behaviour. In the present study this reality was highlighted, and the roles of the teachers and parents were emphasized to confirm what was observed during sessions as opposed to only relying on the subjective perspective of the clinician.

Another activity that the students mentioned as a prior engagement before arriving at a diagnosis, is the use of assessments to check for ADHD. The students indicated the use of the Conners Comprehensive Behaviour Rating Scale as the assessment most frequently used when assessing ADHD. The Conners Comprehensive Behaviour Rating Scale is reportedly considered a valid and reliable tool for ADHD assessment that is regularly used to assist in the diagnosis of ADHD in both South Africa and America (Conners, 1998; Izzo et al., 2019). It is used to gain insight into certain behavioural, academic, and social life challenges.

Marshall et al. (2021) explained components of optimal diagnostic processes, which were determined to enhance the clinician's capacity to adequately diagnose ADHD. Such components included engaging in important clinical questions, the use of scales intended to rate behaviour, and other tests that involve checking the validity of symptoms and cognitive functioning. The current findings were consistent with those of Marshall et al. (2021). This evidence captures an element of the students' understanding and reflects their views of the nature of the process of ADHD diagnosis. This suggests that students portrayed knowledge consistent with current existing literature of sound procedures for the diagnosis of ADHD. This finding is contrary to previous studies conducted on professional students whose findings suggested that the students

sampled were not well-informed about a diagnosis of ADHD (Alsuhaibani et al., 2020; Murtani et al., 2020; Qashqari et al., 2017). Overall, the findings demonstrate students' beliefs in acquiring a full picture presentation of the person suspected to have ADHD. The full picture presentation was viewed to assist students when seeking further clarity and confirmation to further understand the level with which the client presented and met the ADHD diagnostic criteria. Additionally, students seemed to hold beliefs that are consistent with current literature as it pertains to the accurate process of an ADHD diagnosis. This is promising as it also speaks to these students being effective and thorough in the process of diagnosing.

Subtheme 2: Impact of ADHD Diagnosis on Patients

It was apparent in this study that one of the major concerns regarding ADHD was how the diagnosis of ADHD affected the diagnosed individuals. This concern was highlighted when students stressed the importance of understanding the possible impact of the diagnosis as it was viewed by some students to lead to low self-esteem. This is because the clients may understand the symptoms to be their personality and internalize the difficulties to be reflective of their self-worth (Mashiach-Eizenberg et al., 2013; Nguyen & Hinshaw, 2020; Picco et al., 2016).

Findings of this study suggest that the students have an understanding of the influence of ADHD on the clients' lives and therefore considered it a diagnosis that should not be rendered without proper consideration. Promisingly, not only do the findings of this study indicate that the students in the current study were seemingly cognizant of the impact of an ADHD diagnosis, the findings at least hinted that the students are empathic and considerate of clients. It was an interesting finding in this study that the researcher deemed worthy of discussion. These can be considered important findings in the understanding of students' perceptions and are especially

relevant in the view of stigmatization as prominently reported in existing literature. The students were also aware of and mentioned the stigmatization related to taking medication, which was also highlighted in a study by Lebowitz et al (2016). Being aware of the possible impact of an ADHD diagnosis seems beneficial considering evidence that shows that an understanding of the experienced stigma by people with ADHD decreases the chances of professionals stigmatizing clients (Flanigan, 2016). The awareness of how much suffering comes with stigma and the impact of the diagnosis in their lives makes the clinicians more considerate, empathic, thorough, and less stigmatizing of the people with ADHD. Other sources also confirm that awareness of the struggles of clients with ADHD by professionals has an association with increased empathy and understanding and less stigmatization (Elayyan et al., 2018; Fadus et al., 2020). It should be noted, however, that the students' personal experiences could have influenced this perception about the diagnosis and concern over it. Nonetheless, as stated in earlier chapters, these students play a pivotal role in the diagnosing process. As such it is promising because it seems students were aware of the seriousness of declaring an official diagnosis on a person's life.

Theme 5: Perceptions of ADHD Treatment

The study revealed that students viewed ADHD as manageable with the appropriate support and treatment. Interestingly, when asked about treatment and management of ADHD, students spontaneously mentioned medication. However, when asked about how they would go about the process, students mentioned including psychotherapy and medication. It could be that when asked about treatment and management, the students reported medication as it may have been what they thought the researcher was specifically asking about this. This might be related to a predominant trend questioning the efficacy and use of medication prescribed for the disorder. Another possible reason could be the special attention given in literature to widely accepted

pharmacological interventions for ADHD in children and adults (Weyandt et al., 2014), which students may have read. The students may have been responding according to a belief related to what was available in their immediate memory (availability heuristic) or what they thought the researcher was asking about and not merely because they did not know other forms of treating ADHD. However, upon provision of an opportunity to reflect on the specific process of treating ADHD, they responded with other means of treatment and management they believed should be employed.

The students endorsed the combination of medication and psychotherapy as the best intervention for ADHD. The students believed those should be used in conjunction. The students recognized the value in combining the two, with therapy viewed as helping with external behaviour modification while medication was viewed as helping with the internal functioning of an individual with ADHD. The view that employing both medication and psychotherapy often achieves optimal results in treating ADHD is consistent with findings of the study by Mannem et al. (2021), which placed emphasis on using a multidisciplinary approach to manage ADHD. A study by Cherkasova et al. (2020) further supported this by reporting better results such as reduction in ADHD symptoms, improved organizational abilities, and improved self-esteem resulting from using therapy and medication as compared to when treating with therapy alone. In the present study there were two schools of thought. One school of thought considered medication as first line of treatment for ADHD while another endorsed psychotherapy as first line of treatment.

Subtheme 1: Medication as First Line of Treatment of ADHD

Among popular medications mentioned by students were Ritalin, Strattera, and Concerta. Literature reports Ritalin, Concerta and Strattera to be effective in ameliorating vast number of emotional/behavioural challenges, including aggressive and disorderly conduct (Shih et al., 2019). According to literature, not only were Ritalin and Concerta popular medications commonly used among psychology students (Sharif et al., 2021), but the medications were viewed as often prescribed to students and individuals who have ADHD in the clinical setting (Suzuki et al., 2020). Although the students highlighted the value of medication, they felt that over-prescription was a major concern. Some viewed the prescribed medication as problematic when incorrectly dosed as it was viewed to often result in implications such as clients seeming sleepy and slow. These side effects were like those mentioned by Tarak (2019), who stated that common side effects include sleep challenges, changes in appetite, and fatigue. The students indicated dose-related side effects and expressed a need for correct dosage of medication prescribed to patients. This sentiment is in line with the findings of the study by Schoeman and Liebenberg (2017), which stressed dosage optimization when considering medication for ADHD. A process of figuring out which medication is recommended and effective for a particular patient was viewed as important. Following a suggested medication dosage plan, the findings emphasize a routine check-up involving monitoring of ADHD symptoms, experienced side effects, and heart and weight checking. This process involves the customization of treatment (Herrera-Morales et al., 2022). According to the study, treatment personalization for each ADHD patients is helpful as it aims to achieve greater effect and overcome disadvantageous ADHD medication effects among patients.

Promisingly, not only were findings suggestive of students understanding pharmacological treatment options available but also indicative of students' knowledge of the different side effects of medication and the implications for the individuals consuming them. Additionally, the students considered it important to inform caregivers and those taking medication about both the benefits and potential side effects of the medication to allow them an opportunity to evaluate and have a voice in the final decision of treatment. The students stressed parental supervision to be important for the process of taking medication when children are prescribed medication.

Subtheme 2: Psychotherapy as First Line of Treatment of ADHD

Another school of thought, although acknowledging the role and importance of medication, was in favour of psychotherapy as first line of treatment. The students in this study viewed it important to first understand the individual affected with ADHD and their behaviour and engage in psychotherapy to offer them skills to use to help themselves. This is in line with a study by Pelham and Altszuler (2020), who endorsed a psychosocial-first approach in the management and treatment of ADHD. The therapy most advocated for and viewed as yielding great benefit was cognitive behaviour therapy. Employing CBT is in line with literature recommendations for treating adults with ADHD, with some indicating strong empirical support (Fullen et al., 2020). Together with CBT, dialectical behaviour therapy (DBT) and mindfulness-based cognitive therapy (MBCT) have received favour from emerging literature related to ADHD (Nimmo-Smith et al., 2020; Poissant et al., 2019; Zamboni et al., 2021). MBCT has been reported to reduce ADHD symptoms, and as such, a helpful intervention for ADHD-diagnosed university students (Gu et al., 2018). Based on literature, it is evident that the effectiveness of an intervention depends on the unique case and presentation of a particular client. This is

corroborated by perceptions of students in this study indicating a need to first understand each unique client prior to selecting how to best intervene.

The students indicated that they often engaged in psychoeducation, where they would explain the diagnosis and offer information about the disorder and how to manage the symptoms on a daily basis. According to Young et al (2020), to address challenges that come with ADHD such as organizational skills, social and academic functioning, relational problems and problem solving, any psychotherapy should include a psychoeducational aspect. This includes imparting knowledge about the disorder, how it affects relationships with others, the symptoms, and symptom management. Unsurprisingly, in this study, extensive attention was given to the home environment with parents, the school environment with teachers, university, and the work environment understanding the disorder. This was not surprising as these environments form a large part of the context within which a person with ADHD operates and engages and it was in this context that students viewed it as pivotal to the ADHD-affected individuals' adjustment that there be awareness of the disorder by the different environments. For example, the students felt that an awareness of the disorder can help create an environment that allows for good prognosis. Findings of this study hint at the students being sensitive to the crucial role of the environment on the management of the disorder and view this as a protective factor for management of the condition.

Despite given treatment and management options, the students showed uncertainty about ADHD treatment in relation to working with adults who have ADHD. The students in this study referred to having some theoretical knowledge but seemed uncertain about how to implement it. This finding raises questions about the relationship between theoretical knowledge and practical experience as they relate to knowledge of ADHD. This uncertainty in students was expressed

despite the inclusion of adults as able to meet ADHD diagnosis as indicated in the DSM-5. One may give the benefit of the doubt since the disorder has been known as a childhood disorder for many more years than it has been included in the DSM and recognized as a formal diagnosis for adults as well (Martinez-Badía & Martinez-Raga, 2015). Additionally, given the comorbidity profile of ADHD that is reflected in literature (APA, 2013; Solberg et al., 2019), some patients who are adults may have been missed as having ADHD and diagnosed with other similar presenting disorders. Nonetheless, it seems crucial that the students should be knowledgeable about and confident in their skills to help all individuals diagnosed with ADHD, children and adults included.

As expected, in light of students' expressed uncertainties, this study found evidence suggestive of a relative lack of efficacy with respect to working with adults with ADHD. This finding is consistent with prior research findings that have documented concerns that students and some mental health professionals have about ADHD treatment and their ability to effectively offer treatment services to those in need (Labelle, 2018; Marcelle et al., 2018; Weiss & Weiss, 2004). Furthermore, students in the study felt that they would benefit from ongoing training about ADHD in adults and personal means of acquiring information. These findings appear to be consistent with findings of previous literature indicating that students have a desire for further ADHD-related training (Alsuhaibani et al., 2020; Cueli et al., 2020; Murtani et al., 2020; Qashqari et al., 2017). This seems an important finding, since most students in their practical work and in future as professional psychologists will most likely be expected to offer appropriate ADHD treatment to a variety of clientele or work with people with ADHD in some way.

While the study did not explain suggestions in detail, students gave suggestions for improved knowledge of ADHD. This included additional tools for treatment of ADHD with

specific focus on behavioural interventions tailored to assist adults with ADHD. Even with students having communicated this need, it is worth noting that the students reportedly made external efforts to acquiring more knowledge of ADHD by reading articles. This was promising as it highlighted the dedication of students to continue to learn about the disorder and at the very least, an impression was created that the students make efforts to enhance their knowledge of ADHD. It must also be noted that the presence of supervision and frequently consulting supervisors was perceived by students to play a pivotal role in feeling confident about treating ADHD.

Theme 6: Students' Experiences and Feelings about Working with People with ADHD

It was observed in this study that students expressed ambivalent experiences and feelings about working with individuals with ADHD. These included feeling overwhelmed and challenged, the experience requiring patience, being tiring, enjoyable and exciting. In line with findings of this study, Cueli et al. (2020) indicated that students had an ambivalence in terms of feelings of interacting with individuals with ADHD. It is worth noting that the researchers were investigating teaching students at university, whereas in the current study the researcher specifically studied students in the field of psychology. The study suggested that feelings about interacting with people with ADHD could be positive and negative at the same time. For example, the majority of the university students reportedly agreed with a statement indicating that behaviours associated with ADHD were irritating, while many of the students also disagreed with the statement that they disliked working with classes that have students who show ADHD-type behaviours (Cueli et al., 2020). Congruent with these findings, the experience of students in the present study about working with individuals with ADHD was demonstrated in a twofold manner. The students indicated to have enjoyed the experience more when patients presented

with behaviours such as talkativeness as it was perceived to show the students what the patient was thinking and how they feel as opposed to when they were “too fidgety”, which students found to be overwhelming. The ambivalence in feelings identified in the present study appears to be related to how the students perceive or experience the type of behaviour exhibited by the individuals with ADHD. This resonates with research on perceptions and attitudes towards peers with ADHD and other mental health disorders about which university students were found to have different attitudes dependent on the type of symptoms and disorder one presents with (O’Driscoll et al., 2012; Pousson, 2011; Underhill et al., 2019).

Findings indicated that when the students expressed a feeling of being overwhelmed and found the experience of working with individuals with ADHD to be challenging, they perceived the behaviour to manifest in ways that have a direct impact on the process of therapy and the therapeutic relationship between the therapist and client. For example, the students in the present study experienced behaviours such as the clients’ inability to focus, being hyperactive, being distractible, and not remaining seated as presenting challenges when it came to building rapport during a therapeutic session. Barkley and Benton (2021) discussed that poor self-regulation found in adults with ADHD may result in behaviours such as immediately engaging in activities without forethought, skipping engaging in something considered less interesting for something seen as more fun, and not being able to put off engaging in certain behaviours that may be considered inappropriate for that time or setting.

While some students found the experience to be frustratingly challenging, other students found it to be exciting to such an extent that the students approached the experience with an attitude of openness and a willingness to create a platform that is helpful for the ADHD clients and allows room for expression. Similarly, Cuelo et al. (2020) indicated generally positive

attitudes in students. Furthermore, it was conveyed in this theme that students felt it was crucial to have patience when working with individuals with ADHD and for the activity to require of them (clinicians) to be calm in approach. Students highlighted that this patience would be in consideration and understanding that the clients were different to other neurotypical individuals in terms of ability to concentrate and to exercise restraint. This is promising as it not only alludes to students' being knowledgeable and understanding of the disorder but also being sensitive and empathic when helping clients with ADHD. Moreover, with students recounting experiences and noting the approach of remaining calm and patient when with ADHD individuals, it became evident that the students considered this the best way to accommodate the clients. This is consistent with previous research indicating that university students and students who took psychology as a major generally had positive attitudes that created an inclusive environment (Langlois, 2020; Westling et al., 2013).

Overall, the experience of working with people with ADHD was found by students to be “mind-opening” and insightful. The students acknowledged that their experiences helped them to recognize that ADHD was also prevalent among university students as well. Globally, the prevalence of ADHD in adults has been reported to be between 2.5% to 4.4% (APA, 2013) and university students fall within this percentage.

Conclusion

The study findings indicated understanding and knowledge about the nature of the disorder as well as the inattentive, hyperactive, and impulsive behaviours associated with the disorder. A belief of multiple causes of ADHD was identified, with mention of unhealthy pregnancy, genetics, and illnesses and trauma, which are supported by literature. The findings highlighted that students favoured following multiple specific procedures to ensure accurate

diagnosis of ADHD and are cognizant of the possible effect of an assigned ADHD diagnosis on patients' self-concept. Students perceived treatment with medication and psychotherapy to be optimal, with students identifying Ritalin, Concerta, Strattera, CBT, and psychoeducation. These treatment options are supported by literature. Furthermore, a need for further ADHD knowledge was identified by the students in the study. Lastly, exploring students' experiences revealed that students acknowledged the overwhelming challenge that comes with helping ADHD-diagnosed individuals. However, students also expressed feelings of eagerness and openness to the experience.

Chapter 6: Critical Reflection on the Study

In this chapter, the researcher provides a critical reflection on the process of this current study. This discussion describes the researcher's personal experience of the research process. The recruitment process, data collection, and data analysis are evaluated first, and then the study comes to a close with a discussion of the limitations of this study, recommendations for future research, the contribution of the study, and a conclusion.

Reflection on the Overall Research Process

After learning about ADHD and doing research for my honour's studies, my interest in ADHD was sparked. I continued with master's degree and engaged in practical work, which involved working with individuals with ADHD. This experience showed how intimidating it can be to work with patients with ADHD and I felt as if I did not have a genuine understanding of the disorder. I was motivated to explore ADHD. Since the students in the master's programme are in pursuit of becoming psychologists who could work with people with ADHD, I wanted to know what knowledge other students possess of ADHD to take into the field.

During the first stage of formulating a research proposal, it was a challenge to access relevant literature for the study. Most of the available literature focused on other groups in which I was not interested. This challenging encounter, however, offered an opportunity to attend to a gap in literature by conducting this study. I submitted a proposal to the Community Psychosocial Research (COMPRES), which is the institution's Faculty of Health Sciences research entity. I resubmitted twice, each time with further changes to the study. By the time I had resubmitted to COMPRES, there was a global pandemic which resulted in the further changes to the proposal to accommodate the implications of the Covid-19 pandemic for the process of research. I attended Zoom workshops on the way forward and accordingly made amendments to the proposal to be

resubmitted to COMPRES. I then submitted to the Health Research Ethics Committee (HREC) and the Research Data Gatekeeper Committee (RDGC) and received approval from both (see Addendum B and Addendum C).

Prior to conducting the study, I had basic research knowledge after doing an honour's degree in psychology. During this time I engaged in a qualitative research, gaining an understanding of the research approach. Together with this experience, attending research workshops and training that addressed the research process and research ethics, personal efforts to explore the qualitative research approach, and having supervision throughout the process, supplemented my research skills to conduct the study.

Recruiting Participants

The process of recruiting participants was slow. While some participants showed interest in participating almost immediately after the advertisement had been posted, availability was at times a challenge as the participants were preoccupied with course work. In hopes to involve as many participants as possible, I posted the advert on the various NWU Facebook pages and students were emailed. The process of data collection proceeded and at the end, the recruitment strategy proved successful in recruiting participants for this study until data saturation had been reached.

Data Collection

The aims of this study were to gain an in-depth understanding of the knowledge of psychology master's students with regard to ADHD and to explore the perceptions of psychology master's students about ADHD. The use of qualitative methodology was deemed fitting as it provided an opportunity to obtain detailed information. Furthermore, the non-

probability purposive sampling was advantageous to the study as it made it possible to select the most suited participants given the study aims, inclusion and exclusion criteria.

Data collection was adapted to comply with regulations that resulted from the Covid-19 pandemic so that the study would no longer use face-to-face interviews but rather interviews conducted via Skype. This means that the participants and I were in separate remote spaces during the interviews. There were network connection challenges, however, each interview was concluded in one sitting. During the interviews, while maintaining the role of the researcher, I noticed that having been an intern clinical psychologist and having learned about interviewing skills during the master's course, I was able to engage in interviewing by means of open-ended questions, probing, and clarifying. I got better with asking questions and probing as the interviews progressed. The use of Skype interviews proved valuable as it provided the participants with a platform to articulate their thoughts and experiences and it allowed for extensive data collection, resulting in the richness of the data. Skype interviews allowed for the participants and researcher to see one another, creating a relaxing effect and helping with rapport building as they gave a somewhat similar effect to having face-to-face interviews.

During the interviews I took note of how the participants realized in the moment as they were responding areas in their knowledge where they felt most and least confident and some openly acknowledging these things. It seemed that the experience of the interviews made them aware of their own understanding as the process made them reflect prior to responding. The participants seemingly felt at ease with sharing and detailing their thoughts and opinions about ADHD.

Data Analysis

The interviews were transcribed verbatim, which was time consuming, often taking up hours to transcribe each individual interview and going through the audio and contrasting it with their transcript, ensuring that what was written in the transcript was indeed what was said by the participants. As a psychology master's student myself, I was aware of the possible bias that could have resulted from this, causing me to struggle to differentiate between the experiences and thoughts of the participants and my own. I guarded against this by sending the first two transcripts to the supervisor, who critically analysed the transcripts, filtered through, and deciphered any preconceived notions, directing questions, and personal bias. All the transcripts were emailed to the co-coder. Colour coding was used and codes tabulated when analysing the data. Themes and subthemes were independently identified by both the researcher and the co-coder. During discussion, the process was simple as themes identified by the researcher and co-coder were quite similar. Both the similar and different themes were identified until the co-coder and researcher came to a unitary decision about themes, which were then represented in a table. The process was undertaken with little to no challenges. The co-coder and I concluded adjusting the themes in a way that was easily understood by all. Together we agreed on naming themes.

This study gave me an opportunity to expand my knowledge about conducting qualitative research. Additionally, I learned that ethical conduct and thoroughness in all the steps of research is important. While doing the research and experiencing the challenges along the way, some which came with the natural process of research and others of an external nature such as the Covid-19 pandemic, I was challenged to be flexible and versatile in my thinking and way of remaining ethical in conduct. This study allowed me an awareness of the master's students

needing to be afforded spaces that are comfortable to express their thoughts and experiences to recognize their own level of understanding of the disorder.

Strengths and Limitations of the Study

The strength of this study was grounded in the use of semi-structured Skype interviews, which provided meaningful and valuable in-depth information that can contribute to the existing literature of ADHD. This study was not without limitations, and it is important that its findings be interpreted while considering the context of the limitations. Firstly, including counselling, clinical, and research master's students from both year one and two in this study, the researcher noted a possible limitation in that there could be differences in knowledge and perceptions due to the difference in training. Additionally, although both groups need to have thorough understanding of ADHD, depending on the timing of the study, the year two students may have had more extensive experience in an internship context which may/not have included access to ADHD patients as this amounts to pre/during training and post-training knowledge acquired. The study was of a small scale with specific characteristics, only focusing on the knowledge and perceptions of NWU master's students in psychology and of a qualitative nature. The applicability of the data in this study is therefore limited. A larger study allowing for generalizability could be attempted by employing a quantitative research approach. Secondly, due to the majority of the literature being on perceptions of ADHD as it relates to other sample groups, this came with some limitations.

Thirdly, because of Covid-19 regulations and some network connection problems encountered during the Skype interviews, it was challenging to generate data without disturbances that caused delays in the process. As such, I acknowledge the potential that participants may have felt burdened to stay on the Skype call and continue with the interview and

repeating to the researcher their responses when they were cut short by the loss of network connection. The participants may have understood the value and complications that come with recruiting participants and sympathized with the process of completing a dissertation.

Recommendations for Future Research

In light of the given limitations of this study, the following recommendations for future research are provided for consideration. Firstly, while this study did attempt to contribute to limited literature by exploring the knowledge and perceptions of psychology master's students about ADHD, it is recommended that future studies with similar focus be conducted to increase literature and awareness of ADHD knowledge in the field.

Secondly, the researcher was aware of the scarcity of literature on the perceptions of master's psychology students in the South African context. As such it is recommended that similar studies about ADHD knowledge and perceptions of master's psychology students be conducted at other universities to enable a comparison to be made and to provide a clearer picture of the ADHD knowledge and perceptions of this population group. Furthermore, this could be inclusive of possibly other conditions. Studies could also explore students' experiences of working with clients who have ADHD, their personal conceptualizations of ADHD, or their reflexivity from supervision on working with ADHD clients.

This study served as the starting point to explore the knowledge and perceptions of psychology master's students and may serve as a recommendation for future research directions. This includes establishing whether students' level of ADHD-related knowledge and their perceptions and attitudes towards ADHD significantly predict their ability to effectively assist ADHD-affected individuals.

It may be important for future studies to understand and explore the factors influencing the knowledge and perceptions of psychology students, considering the complexity that comes with living in a diverse nation such as South Africa.

This study was a small-scale qualitative study, thus conducting a nation-wide large-scale study perhaps of a quantitative nature and possibly even consisting of a comparison sample, may provide valuably insightful results about the general knowledge and perceptions profile of students about ADHD of a larger population. Furthermore, the findings would enable a conclusion on the situation nationally. It would allow for generalization of results to a larger number of participants, as opposed to results being reflective of a small number of participants as in the case with a qualitative study.

Contribution of the Study

The study provided important insight into psychology master's students' knowledge and perceptions of ADHD. The study illustrated how students' understanding and perceptions about different aspects of ADHD are consistent with findings that psychology students are knowledgeable about ADHD (Langlois, 2020) and that show students' perceptions to be consistent with literature regarding factors such as behaviours associated with the disorder, different causes, and the diagnosis of ADHD. The depth of information provided by this study contributed to the existing literature, particularly within the context of South African literature concerning mental health professional students' knowledge and perceptions of ADHD. This study contributes to the limited literature reported, which predominantly focuses caregivers' experiences of raising children with ADHD, university students with ADHD, and primary school children with ADHD symptoms (Dreyer et al., 2016; Lawrence et al., 2017; Marais et al., 2017; Murtani et al., 2020; Vibert, 2018). This study has contributed to a decrease in the lack of

research on mental health professional student as indicated by previous researchers (Hofer 2010; Murtani et al., 2020). Additionally, this research has, to a certain degree, contributed by addressing an unexplored and apparent gap within the field of psychology and highlighting the NWU master's students' knowledge and perceptions, which could conceivably provide a foundation for further exploration. Finally, the study created awareness about ADHD knowledge and perceptions and will be of benefit to those who engage with it. Recommendations for strategies of gaining more knowledge of ADHD indicated in this study could assist other students who have to be informed about ADHD.

Conclusion

This qualitative study explored ADHD knowledge and perceptions among psychology master's students of the NWU and this conclusion is based on the findings. Overall, the findings of this study were seldom greatly different to contemporary research findings. It was apparent from the findings that students had comprehensive knowledge and understanding of the term ADHD. On exploring students' beliefs on causes of ADHD, findings indicated congruence between students' beliefs and the heterogeneous nature of ADHD causes reported in literature. The students perceived behaviours associated with ADHD to be inattention, hyperactivity, and impulsivity. Based on the descriptions and explanations of ADHD-related behaviour provided by the students, which included some of the most important and definitive aspects of ADHD as found in the literature, as well as the familiarity with the nuances in ADHD behaviours students associated with ADHD, it seems students have a comprehensive understanding of ADHD-related behaviours. The students' approach in the process of diagnosing ADHD showed an understanding of the process and the impact that comes with such a diagnosis. Students identified various treatment modalities for ADHD that were supported by literature. Notably,

there was an appreciation and recognition of need for further knowledge acquisition with respect to ADHD to develop an enhanced and accurate comprehension of ADHD, particularly related to treatment. The findings were not different from contemporary research, as an exploration into the students' experiences of individuals with ADHD revealed that students expressed an array of different feelings and experiences such as feeling overwhelmed and challenged, the experience requiring patience, being tiring, and enjoyable and exciting. Lastly, although challenged in working with individuals with ADHD, students generally portrayed openness to the experience.

Evidently, the integral role of psychology master's students' knowledge in the processes of observing, identifying, and treating ADHD cannot be overlooked. It seems important that the students have a sound comprehension of ADHD for the timeous identification and effective treatment offering for ADHD management. Thus, the knowledge and perceptions of those helping should be explored constantly. The aims of this study were to explore NWU psychology master's students' perceptions of ADHD and to acquire an in-depth understanding of their knowledge thereof. Ultimately, this study was successful in that the aims of the study were met and research questions answered.

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Addenda

Addendum A: COMPRES Approval Form



Scientific Committee Approval for a Research Application

Research using human participants, health or health-related studies

Scientific Committee Information			
Name of the scientific committee	COMPRES	Discipline(s)	MA/MSc Clinical Psychology
Research Entity	COMPRES	Contact Person for the committee	Chanté Klopper
Faculty	Health Sciences	E-mail address for the committee contact person	Chante.Klopper@nwu.ac.za

Study & Scientific Review Information				
Title of the study:	Exploring Attention-Deficit/Hyperactivity Disorder knowledge and perceptions among psychology master's students of the North-West University			
Researcher/Study Supervisor Initials, Name and Surname:	Prof Herman Grobler	NWU Number:	23376600	
Student Initials, Name & Surname:	Masego Matau	NWU Number:	25554069	
Other Researchers involved in the study (Initials, Names and Surnames):	Ms K Tsebe			
Potential risk level for human participants:	No risk	☐	Motivate: Click here to motivate the risk level	
	Minimal risk	☐		
	Medium risk	☒		
	High risk	☐		
Potential risk level for children and incapacitated adults:	No risk	☒	Motivate: Click here to motivate the risk level	
	No more than minimal risk of harm	☐		
	Greater than minimal risk with the prospect of direct benefit	☐		
	Greater than minimal risk with no direct benefit	☐		
Recommendation for the REC:	Review by the research ethics committee required	☒	Motivate: Proposed study directly impacting on human participants.	

Any additional comments	Motivate: Click here to enter any additional comments
Chairperson of the committee	Prof CHM Bloem
Committee members present during the review (NB, please ensure no conflict of interest)	Dr Erika Hiltje Ms Amori Marale Dr Rini Prinsloo
Date of review	2021/05/24

Interim
Scientific
Committee
COMPRES

Digitally signed by
Interim Scientific
Committee COMPRES
Date: 2021.06.01
14:18:17 +02'00'



Signature of Chairperson

Date: 2021/06/01

Signature of Research Director

Date: 2021/06/01

Form developed by Prof Minnie Greeff, 1 March 2017
Form updated by Prof Minnie Greeff, 31 January 2019
Form updated by Prof Minnie Greeff, 8 May 2019
Form updated by Prof Minnie Greeff, 23 July 2019
Form updated by Prof Minnie Greeff, 10 August 2019

Original: 00000221 01 My Own: Research and Postgraduate Education 1.0.0 Protocol 1.0.0 Approval_Human_Participants.docx
10 August 2019

Re: Reference 3.1.2.4

Addendum B: HREC Approval Form



Private Bag X1290, Potchefstroom
South Africa 2520

Tel: 086 016 9698

Web: <http://www.nwu.ac.za/>

**North-West University Health Research Ethics
Committee (NWU-HREC)**

Tel: 018 299-1206

Email: Ethics-HRECAppl@nwu.ac.za (for human
studies)

26 October 2021

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the North-West University Health Research Ethics Committee (NWU-HREC) on 26/10/2021, the NWU-HREC hereby approves your study as indicated below. This implies that the NWU-HREC grants its permission that, provided the general and specific conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: Exploring Attention-Deficit/Hyperactivity Disorder knowledge and perceptions among psychology master's students of the North-West University

Principal Investigator/Study Supervisor/Researcher: Prof HB Grobler

Student: M Matau - 25554069

Ethics number:

N	W	U	-	0	0	2	4	4	-	2	1	-	A	1
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Institution Study Number Year Status
Status: S = Submission; R = Re-Submission; P = Provisional Authorisation;
A = Authorisation

Application Type: Single study

Commencement date: 26/10/2021

Expiry date: 31/10/2022

Risk:

Minimal

Approval of the study is provided for a year, after which continuation of the study is dependent on receipt and review of an annual monitoring report and the concomitant issuing of a letter of continuation. A monitoring report is due at the end of October annually until completion of the study.

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:

The principal investigator/study supervisor/researcher must report in the prescribed format to the NWU-HREC:

- *Annually on the monitoring of the study, whereby a letter of continuation will be provided annually, and upon completion of the study; and*
- *without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.*

The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the principal investigator/study supervisor/researcher must apply for approval of these amendments at the NWU-HREC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.

Annually a number of studies may be randomly selected for active monitoring.

The date of approval indicates the first date that the study may be started.

In the interest of ethical responsibility, the NWU-HREC reserves the right to:

- *request access to any information or data at any time during the course or after completion of the study;*

- to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process;
- withdraw or postpone approval if:
 - any unethical principles or practices of the study are revealed or suspected;
 - it becomes apparent that any relevant information was withheld from the NWU-HREC or that information has been false or misrepresented;
 - submission of the annual monitoring report, the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and/or
 - new institutional rules, national legislation or international conventions deem it necessary.
- + NWU-HREC can be contacted for further information via Ethics-HREC@nwu.ac.za or 018 299 1206

Special conditions of the research approval due to the COVID -19 pandemic :

Please note: Due to the nature of the study i.e. (online collection of qualitative students), this study will be able to proceed during the current alert level, following receipt of the approval letter. No additional COVID-19 restrictions have been placed on the study except that the researcher must ensure that before proceeding with the study that all research team members have reviewed the North-West University COVID-19 Occupational Health and Safety Standard Operating Procedure.

The NWU-HREC would like to remain at your service and wishes you well with your study. Please do not hesitate to contact the NWU-HREC for any further enquiries or requests for assistance.

Yours sincerely,



Digitally signed by
Prof Petrus Bester
Date: 2021.10.28
19:21:14 +02'00'

Chairperson NWU-HREC

Current Draft (20200707) Only: Ethics Research and Postgraduate Studies 1.5.4.2 Template 1.5.4.2_NWU-HREC_EAL.docx
20 August 2019
File Reference: S.1.5.4.2

Addendum C: RDGC Approval Form



Private Bag X6001, Potchefstroom
South Africa 2520

Tel: +2718 299-1111/2222

Web: <http://www.nwu.ac.za>

Research Data Gatekeeper Committee

NWU RDGC PERMISSION GRANTED / DENIED LETTER

Based on the documentation provided by the researcher specified below, on 28/09/2021 the NWU Research Data Gatekeeper Committee (NWU-RDGC) hereby grants permission for the specific project (as indicated below) to be conducted at the North-West University (NWU):

Project title: Exploring Attention-Deficit/Hyperactivity Disorder knowledge and perceptions among psychology master's students of the North-West University.

Project leader: Prof HB Grobler

Researcher/Project Team: M Matau

Ethics reference no: NWU-00244-21-S1

NWU RDGC reference no: NWU-GK-21-058

Specific Conditions:

- Due the COVID-19 pandemics the Committee would like to advise the researcher to practice the necessary caution and adhere to the National Covid-19 Guidelines when conducting research with participants.

Approval date: 28/09/2021

Expiry date: 27/09/2022

General Conditions of Approval:

- The NWU-RDGC will not take the responsibility to recruit research participants or to gather data on behalf of the researcher. This committee can therefore not guarantee the participation of our relevant stakeholders.
- Any changes to the research protocol within the permission period (for a maximum of 1 year) must be communicated to the NWU-RDGC. Failure to do so will lead to withdrawal of the permission.
- The NWU-RDGC should be provided with a report or document in which the results of said project are disseminated.

Please note that under no circumstances will any personal information of possible research subjects be provided to the researcher by the NWU RDGC. The NWU complies with the Promotion of Access to Information Act 2 of 2000 (PAIA) as well as the Protection of Personal Information Act 4 of 2013 (POPI). For an application to access such information please contact Ms Annamari De Kock (018 285 2771) for the relevant enquiry form or more information on how the NWU complies with PAIA and POPI.

The NWU RDGC would like to remain at your service as scientist and researcher, and wishes you well with your project. Please do not hesitate to contact the NWU RDGC for any further enquiries or requests for assistance.

Yours sincerely

Prof Marlene Verhoef

Chairperson NWU Research Data Gatekeeper Committee

Original details: (22351930) C:\Users\22351930\Desktop\test 2.docm
13 November 2018

Current details: (22351930) M:\DSS1\8533\Monitoring and Reporting Cluster\Ethics\Applications RDGC\Updated RDGC Permission Letter.docm
15 November 2018

File reference: 1.1.4.3

Addendum D: Advertisement for Sample Recruitment



PARTICIPANTS NEEDED FOR RESEARCH STUDY!



Exploring Attention-Deficit/Hyperactivity Disorder knowledge and perceptions among psychology master's students of the North-West University

AIM OF STUDY

TO EXPLORE THE CURRENT KNOWLEDGE AND PERCEPTIONS THAT PSYCHOLOGY MASTER'S STUDENTS OF NORTH-WEST UNIVERSITY HAVE ABOUT ADHD.

WHAT TO EXPECT

A SKYPE INTERVIEW THAT TAKES APPROXIMATELY 30-45 MINUTES TO COMPLETE. THE TYPE OF QUESTIONS WILL CONSIST OF ANY KNOWLEDGE, IDEAS AND OPINIONS REGARDING ADHD. A R100 DATA VOUCHER WILL BE PROVIDED AFTER EACH INTERVIEW AS TOKEN OF APPRECIATION FOR TAKING PART IN THE STUDY.

CONDITIONS

TO BE INCLUDED IN THE STUDY, YOU MUST BE A PSYCHOLOGY MASTER'S STUDENT AT THE NORTH-WEST UNIVERSITY, HAVE ACCESS TO A SMARTPHONE OR DESKTOP/LAPTOP (WITH SKYPE) AND WITH INTERNET ACCESS. BE OVER THE AGE OF 18 YEARS OLD. PARTICIPATION IN THE STUDY IS VOLUNTARY AND CONFIDENTIAL AND YOU MAY WITHDRAW AT ANY TIME.

FOR ACCESS, PLEASE CLICK BELOW:

https://docs.google.com/forms/d/e/1FAIpQLSed-QeJDbaCyWEG6PvgUs7IWoaJaRWQosjS7JC-HiikSR8YgA/viewform?usp=sf_link

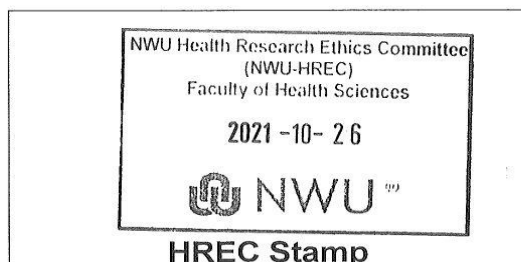
FOR MORE INFORMATION:

IF YOU HAVE ANY QUESTIONS ABOUT THE RESEARCH PLEASE CONTACT RESEARCH ASSISTANT, CONSTANCE SINGO singoclwini@gmail.com 060 549 4047 OR MASEGO MATAU (RESEARCHER) masegomatamunni@gmail.com 076 501 7369)

Addendum E: Informed Consent form



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INFORMED CONSENT DOCUMENTATION FOR PSYCHOLOGY MASTER'S STUDENTS BEING INTERVIEWED

TITLE OF THE RESEARCH STUDY: Exploring Attention-Deficit/Hyperactivity Disorder knowledge and perceptions among psychology master's students of the North-West University

ETHICS REFERENCE NUMBERS: NWU-00244-21-A1

PRINCIPAL INVESTIGATOR: Prof. Herman Grobler

POST GRADUATE STUDENT: Masego M. Matau (25554069)

ADDRESS: House no.1876 Mogajane Village, Rustenburg, 0309

CONTACT NUMBER: 076 501 7369

You are being invited to take part in a **research study** that forms part of the fulfilment for a Master of Social Sciences in Clinical Psychology. Please take some time to read the information presented here, which will explain the details of this study. Please ask the researcher or person explaining the research to you any questions about any part of the study that you do not fully understand. It is very important that you are fully satisfied and clearly understand what this research is about and how you will be involved. Also, your participation is **entirely voluntary** and you are free to refuse

to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part now.

This study has been approved by the **Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00244-21-A1)** and will be conducted according to the ethical guidelines and principles of Ethics in Health Research: Principles, Processes and Structures (DoH, 2015) and other international ethical guidelines applicable to this study. It might be necessary for the research ethics committee members or other relevant people to inspect the research records.

What is this research study all about?

We plan to acquire an in-depth understanding of the NWU psychology Master's students' knowledge of ADHD and to explore NWU psychology Master's students' perceptions about ADHD.

This study will be conducted through a Skype interview, in a private venue of your choice and will be done by experienced health researchers trained in qualitative research and its methods (semi-structured interviewing and thematic analysis). A minimum of 10 to 12 participants will be included in this study.

Why have you been invited to participate?

You have been invited to be part of this research because you are:

- A Psychology Master's student in the North-West University;
- Fluent and capable to read and write in English as it will be medium of communication in the data collection process.
- Have access to a smartphone or desktop/laptop and internet access
- Be willing to partake in the study to allow for consent and voluntary participation

What is the procedure?

- Participants will have access to an advert about the research through their NWU students Facebook groups and Efundi. The advert has a link that the participants have to click. Following clicking on the link, participants will be required to fill in their names, email addresses, and contact numbers. In addition, an independent person, Mrs Louise van Wyk, from Community Psychosocial Research (COMPRES), will send out e-mails to participants with the attached poster. She is part of the administrative team in COMPRES and Centre for Child Youth and Family Studies (CCYF).
- After indicating their willingness to participate, the researcher will contact the participants via cell phone or email.
- The researcher and participants will set a date for discussing and signing the consent form.
- The researcher will send the consent form via email, a week before the date set for signing the consent form.
- On the specific day, the researcher and participants will sign the consent forms online, each in front of a witness. The witness for the researcher will be an independent person to ensure that no coercion occurs. The contact information of the researcher is supplied in this form and the contact information of the person obtaining informed consent will also be given to you.
- Following signing of the consent form, the participant will be tasked with taking a picture of the consent form (including signatures) and send to the researcher via WhatsApp.
- After participants have given informed consent, the researcher will contact the participants telephonically to set a time and date that is convenient for the participants to have the interview.
- Participants will be contacted telephonically again by the researcher the day before the set time and date for data collection to remind them.

- The data will be collected by the researcher via Skype.

What will be expected of you?

You are expected to be part of the once off individual interview that is going to take between 30-45 minutes with seven main questions and possible follow-up questions.

Will you gain anything from taking part in this research?

- The research may indirectly benefit the broader community of students by creating greater awareness with regard to their knowledge and perceptions, which, in turn, can potentially contribute to their motivation to seek more knowledge and education regarding the disorder.
- Knowledge gained from this study could indirectly benefit the community by providing greater insight on ADHD knowledge and perceptions.

Are there risks involved in you taking part in this research and what will be done to prevent them?

In the case that you as the participant have any mental discomfort or distress during or resulting from your participation in the study, a referral can be made to a qualified professional to provide emotional support if need be, free of charge.

How will we protect your confidentiality and who will see your findings?

Only the researchers and research team will be able to view your findings. Findings will be kept safe by locking hard copies in locked cupboards in the study leaders' office for a minimum of five years with only limited access prior to it being destroyed through a shredding machine. All electronic data gathered, such as interviews in the form of digital voice recordings will be stored on a computer that is password protected and a research team member will be tasked with ensuring

that all electronic data be deleted from the password protected computer and recycle bin further cleared out.

What will happen with the findings or samples?

The hard copies of the collected data will be kept in a locked cupboard at Ipelegeng Family and Child Care Centre. All data will be destroyed after five years. The final mini-dissertation (the study findings and recommendation) will be on published on the university website.

How will you know about the results of this research?

- Upon completion of the study, the results of the study will be published and further communicated to participants through a poster that will be made available on various NWU students Facebook groups and Efundi.

Will you be paid to take part in this study and are there any costs for you?

- No, you will not be paid to take part in the study, but there will also not be any costs involved for you.
- Participants will each receive an estimated R100 worth of data after each interview, which will be loaded to the preferred cell phone number or digital platform of participants

Is there anything else that you should know or do?

- You can contact Masego Matau (researcher) on 076 501 7369 masegomataummm@gmail.com or Constance Singo (research assistant) on 060 549 4047 singoelwimj@gmail.com if you have any further questions or problems with the informed consent form. Alternatively contact Prof Herman Grobler via email: Herman.Grobler@nwu.ac.za if you have any further questions.
- You can also contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206 or carolien.vanzyl@nwu.ac.za if you have any concerns that were not answered about the research or if you have complaints about the research.

- You will receive a copy of this information and consent form for your own purposes.

Declaration by participant

By signing below, I agree to take part in the research study titled: _____

I declare that:

- I have read this information/it was explained to me by a trusted person in a language with which I am fluent and comfortable.
- The research aims were clearly explained to me.
- I have had a chance to ask questions to both the person getting the consent from me, as well as the researcher and all my questions have been answered.
- I understand that taking part in this study is voluntary and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be handled in a negative way if I do so.
- I may be asked to leave the study before it has finished, if the researcher feels it is in the best interest, or if I do not follow the study plan, as agreed to.

Signed at (place) on (date) 20

.....
Signature of participant

.....
Signature of witness

Declaration by person obtaining consent

I Masego Matau declare that:

- I clearly and in detail explained the information in this document to
.....
- I did not use an interpreter.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I gave him/her time to discuss it with others if he/she wished to do so.

Signed at (place) on (date) 20

.....
Signature of person obtaining consent

Declaration by researcher

I *Masego Matau* declare that:

- I did not use an interpreter
- I encouraged her to ask questions and take adequate time to answer them
 And I was available should she want to ask any further questions..
- I am satisfied that she adequately understands all aspects of the research, as described above.
- I am satisfied that she had time to discuss it with others if she wished to do so.

Signed at (*place*) On (*date*) 20

.....
Signature of researcher

Addendum F: Interview Schedule

Study Leader: Prof HB Grobler

Student Name and Surname: Ms Masego Matau

Student number: 25554069

Study Title: Exploring Attention-Deficit/Hyperactivity Disorder knowledge and perceptions among Psychology Master's students of the North-West University.

Questions used in the Interview schedule:

1. Please explain what do you understand about ADHD?
2. What is your knowledge on ADHD behaviour among children and adults?
3. How do you differentiate between male and female adult ADHD symptom-presentation/manifestation?
4. Tell me about your experience of interacting with people with ADHD
5. What is your understanding of other conditions that can co-occur with ADHD?
6. What is your understanding of how ADHD is diagnosed?
7. Can you please share your perspective regarding treatment/management of ADHD?

Addendum G: Coding and Data Analysis Template

RESPONSES	CODES	THEMES	SUBTHEMES
(PA) The word ADHD or hyperactivity, they are just loosely used without full evidence, full assessment to say this it's ADHD with evidence. So it's maybe abused or misused. genetics could be playing a role obviously in the development of ADHD. Environment, I would say it perpetuate the disorder but mostly I could say it's because of genetics. With regards to inattention the person will be unable to sustain attention even have difficulty organising tasks, those same tasks they will have difficulty finishing them or sustaining attention while doing them. they can't sit still, they have to be busy with something almost all the time..., others would fidget, tap their foot or something, busy with their hands. I would say it would be challenging because one would need to stay calm themselves it would push me outside the comfort zone. It would just be	loosely used misused neurodevelopmental disorder characterised by hyperactivity and often attention-deficit inability to regulate impulses affects a person's holistic functioning	Knowledge and Understanding of ADHD	
	genetic predisposition environment prenatal development stress levels during pregnancy substances use during pregnancy factor genetic vulnerability can be transferred from the mother to the child. Birth complications, Illnesses Injuries trauma	Causes of ADHD	
	hyperactivity inattention difficult to sustain attention forgetfulness distracted very easily lose the attention constantly fidgeting Restless impulsive do something without thinking about the consequences uncomfortable in sitting in one place a lot of energy	Behaviours Associated with ADHD	

challenging but in an exciting manner take both the medication and maybe the therapy combined in managing ADHD. The medication would help with what is happening inside and then the therapy would help with the behavioural part of it. (PB) Well ADHD basically has two components; hyperactivity as well as inattention. It basically affects a person's holistic functioning such as educational functioning as well as their home environment as well as how they can interact with other people. pregnancy plays a huge role, as well the stress levels and substances that the mother does use during pregnancy. they would stand up in class and walk around or in a home environment when perhaps the family is eating dinner they would want to stand up and go watch TV. There's different kinds of treatment options. Medication..., so what I know is that stimulants are the most	Get holistic picture first look at the criteria ask questions other symptoms intake interview collateral information from the teachers get to the significance of ADHD Conduct relevant assessments Conners III assessment diagnosis that changes lives would impact their self-esteem low self-confidence can be treated and managed pro blended-treatment both the medication and therapy Medication Psychopharmacology is the first step Ritalin Strattera over prescription not dosed correctly side-effects implications are really bad look like zombies not focusing reduces the symptoms weighing the benefits and risks	Students' Beliefs about The Diagnosis of ADHD Perceptions of ADHD Treatment	Process of ADHD Diagnosis Impact of Diagnosis on Patients Medication as First Line of Treatment of ADHD Psychotherapy as First Line of Treatment of ADHD
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effective which is your Ritalin. Also non-stimulants which is your Strattera. Try to help the parents in terms of weighing the benefits and risks and just to alert them about the side-effects so that they can make their own informed decision regarding medication. first look at the criteria what other symptoms are	make their own informed decision Psychotherapy skills before pills always CBT Psychoeducation equipping the patient or the people around them Area not competent in yet Need for more tools Supervision helped		
they presenting with. It wasn't how the media depicts people with ADHD. Yes you can see symptoms here and there...so it wasn't as hectic... Yes there were times maybe a week or two when she wasn't on medication and the symptoms would be much more prevalent such as the excessive talking, constantly fidgeting, wanting to walk around, and losing her train of thought. I would have to be quite patient. I would have to understand that they are not, in terms of concentration and hyperactive behaviour, at the level of the average child. I'd have to take that into consideration...So just being	hectic very hard to develop rapport be calms be very patient overwhelming feels chaotic it's a nice experience breaks are also needed challenging exciting mind opening	Students' Experiences and Feelings about Working with People with ADHD	

patient with them and taking it very slow would be very vital (PC): What I understand about ADHD is that it's a learning disorder that normally occurs in young children from a very young age and they have problems with attention and hyperactivity. It's hard for them to concentrate. It's also hard for them to follow through with instructions. It's also hard for them to remember things, they are forgetful at times, they also lack attention, they run around the house, there's just a lot of energy with them. I would first have a clinical interview with the client and then gather enough information from the parents. Know how they react and act in different settings, not just one, maybe at school, at home, while playing with friends or other contexts. Also use the DSM-5 to see if they meet all the criterion. Even consider the whole background of the child. You also have to get collateral from the teachers at school. Only then can I diagnose. It was overwhelming So it would be very overwhelming for me to work			
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with them, because conducting an assessment, literally sitting down with them it's hard for them to even pay attention so they become very distractible during assessment time. There are different kinds and it depends on the type of ADHD that you have so if you are prescribed the specific type that you need for your symptoms...it might not fully cure you or fully help you but it minimises your symptoms. There's Ritalin and concerta. Sometimes they can give them respidon and epilim, respidone is mostly for anger issues if they have it. Psychotherapy but it works best when there is someone who is taking care of the child at home because in school setting you're able to teach them skills on how to deal with the child. You can do a lot of things in individual format and in family format to teach them about ADHD and how to deal with the child within the home setting. For the child you can mostly offer supportive therapy to make them feel that as much as you might feel that you're different, you're still a human being"			
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they might play a role in a way that they see themselves, in terms of their self-confidence, self-concept. They might even get to the point of self-diagnosis to say that “I have ADHD” and may equate that to their own personality or being. Also having taken medication from a very young age they may be stigmatised. (PD): It was very hectic because you are dealing with a child who doesn't even listen to their own parent and now here I was as a stranger and this child is supposed to listen to me. So it was very hard to develop rapport with the patient or even try to develop any kind of relationship with the patient to trust you because here I was trying to make sure that I develop rapport and this child is not listening to me, this child wants to stand up and leave, or this child is looking above me, literally being all over. So it was a very hard to work with the child, it was a very draining process. Usually how I would see it, if I			
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were to ask question during the intake interview. Questions like “do you sleep a lot?”, “when you are at work do you touch a lot of things all at once?”... So during my interview, that’s how I would see that the person has attention-deficit which forms part of ADHD. Usually for me I would see with how the questioning would go It’s a brain neurological disorder... Usually a predisposing factor, biological predisposing factor, just genetic vulnerability. It can be transferred from the mother to the child. Birth complications, illnesses and injuries to the child when they were growing up. With regards to inattention the person will be unable to sustain attention even have difficulty organising tasks, those same tasks they will have difficulty finishing them or sustaining attention while doing them. When it comes to hyperactivity they will be fidgety, a person won’t be able to sit still, always on the move, gets easily distracted. The child wouldn’t			
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want any task that requires attention, basically any task that would take them one hour or more, they avoid them all together, they don't listen well, they don't follow instructions, they can't play quietly. The interview is the first step for me after getting consent. assessments that require concentration to see if the child can concentrate. So assessment and interview is the way to go for me. Also collateral. So for me collateral information is important because you want to make sure that the whole map fits together because one person's information might not correlate with another person's information The most important thing for me basically because no man is an island, for me family therapy might not be the first but obviously if they have been diagnosed they are already on the pills. So for me it would literally be to support so I would provide assistance in terms of, I			
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would follow more or less a CBT model. Also psychoeducation I think it is Strattera....that's the one that I know. I think when it comes to...the grams that they are given...with children it's a bit too much. So pharmacology for me it's good, I'm up for it. I literally would be an ambassador for the pharmacology because with ADHD it's a neurodevelopmental disorder you can't deal with it without pharmacotherapy. So I think it's good.

(PE): I would have to do psychoeducation and would have to do behavioural therapy with the parents on how to actually instil order in the house with the kids. I would also inform them to go back home and teach other people like siblings or other guardians so that whatever the child is presenting with it doesn't come as something they don't know but they actually have predictions on what is going to happen and also I would do

psychoeducation on how to manage that. My confidence was good because most of the time I would be creative whenever I did psychoeducation with the parents and behavioural therapy, plus I had supervisors so I was pretty confident. It's basically a neurodevelopmental disorder, it affects attention, it has hyperactivity and impulsivity. They struggle to focus and become impulsive. It's basically caused or can be caused by mostly because of mothers smoking while pregnant with the child. the person would lack attention in the sense that they wouldn't pay mind to information or their surroundings. They become easily distracted, fail to actually take in the external stimuli...not being able to sit still, fidgeting, having the need to constantly be on the move or doing something. Collateral is very important Personally I feel that there's a lot of over prescription especially of Ritalin because if a child comes		
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through with attention problems, what we tend to do is run off to prescribe stimulants although I do also appreciate that they are very vital as the first line of treatment but I feel that psychotherapy goes a long way compared to what pharmacology could do.

Behavioural modification. CBT

is

the modality that I tend to feel more comfortable with. Also psychoeducation is important. With information and education about what ADHD is and what you should expect and how to actually treat and manage it so I feel like you would be equipping the patient or the people around them with the resources that they need to deal with it.

(PF): ADHD is actually a disorder that's characterised by hyperactivity and often attention-deficit. Now mostly in children you will find that this person is uneasy, they are unable to sit in one place, they will be moving from this point to this point. They don't usually follow

instructions but because they are always on the move. The symptoms must have been affecting their functioning. Most of it could be genetics because if you find a child with ADHD and you check the background of this person you would realise that there was one person with ADHD in the family. I think it's mostly genetics. I don't think I have a good experience of working with an ADHD child, it's almost impossible to work with them. You have to also do assessment with them so it's hectic. The first thing is doing the MSE and observing their behaviour. You do assessments also to check their attention, their level of concentration. So... you don't just come out and say someone has ADHD, you must have an assessment that supports your diagnosis. I would actually go with medication, there are medications for ADHD. If it's a child also you need to involve the family members...wherein you will be psychoeducating them about the disorder, how they can best support the child in the home environment. Also ADHD cannot be cured completely but it can actually be			
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managed through the medications and different therapy styles (PG): so it's a neurodevelopmental disorder more than anything. I believe they were born with it. So a child who is inattentive sometimes, a child who is impulsive, disorganised in doing their tasks, gives up easily, fidgets, can't sit still after some time. it's a nice experience. It would depend because sometimes if they're talkative then it's a nice experience. If they're talkative then at least you're getting where their mind is at. If they're too fidgety and want to walk around and you're trying to stop them it gets you to a point where the breaks are also needed for yourself. I used to have this weird view of Ritalin when I was growing up like "it makes children like slower, sleepy" and now that you're more on the clinician's side, when you have to be the one who refers I think the one thing I can say about that is the dosage. Sometimes the children are not dosed correctly			
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so they might be given an upper dose and then the implications are really bad so it means they look like zombies, they're actually not focusing. With ADHD medication it's made for the focus, to treat the inattentiveness, the hyperactivity, not to make a child a "zombie". So those are my views, I mean I changed my views to actually realising that what might actually be the problem is the dosage that is given to a child, which it's more of getting collateral information to get to the significance of ADHD. I would use the Conner's III assessment which is a report. It's an inventory that you give to the parents and that you give to the teachers so now those are two settings that the child is in. It's more of collecting collateral information...which is more of getting collateral information to get to the significance of ADHD. Psychopharmacology is the first step.

(PH):neurodevelopmental disorder that is usually seen in children. The onset is during

childhood but it can carry on during adulthood. They lose concentration very easily and sometimes they may do something without thinking about the consequences. They would be a lot of that discomfort with sitting still and a lot of energy when they are outside playing outside and interacting with the other kids so typically running around and just being very active, physically active. It was quite mind opening to see how it's not like they're completely different. So I know that with ADHD genetics plays a very big role. Getting collateral information from the parents and even from the teachers at school would also be important. Also psychodiagnostics where you give assessments to kids to determine if they have ADHD, So it can be treated and managed. There's also medication involved however we would try to correct behaviour with CBT and then also medication. So it helps maintain the relationships because of the understanding of the

individual affected and those around them and it would give them room for understanding and for peace of mind for themselves. It creates a good environment for the person to have a good prognosis

(PI): It's a neurodevelopmental disease or condition. You will find that either the child has problems with attention and hyperactivity. They wouldn't be able to focus in class, likely to misbehave in class, wouldn't be able to sit still, wait for their turn and so they would be busy and easily bored. Something had to have happened with the brain either during pregnancy or delivery for one to have ADHD. I think you need collateral information from the school and other areas like the parents, other activities that the child is doing as well maybe get a report from them too. You need the developmental history and check global development. It's something that will be there everywhere in their behaviour so there would be things that

confirm that it's ADHD. I think it would depend on each case like if this child needs medication or if there's something else that you can do before medication. (PJ) So basically ADHD is a neurological disorder diagnosed in childhood. It inhibits the ability of the individual to regulate impulse control. They really battle to kind of mediate their behaviour. It all comes up as hyperactive-type behaviour. They are far more hyperactive than another child. They will tend to behave in ways that are very impulsive, they'll do things without thinking. A lot of people would use the words "careless", "rushed", "impulsive", "they don't think before they talk"...it's that inability to kind of stop the behaviour, so they'd rather act than not act and they require that stimulation. So their actions		
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usually lead towards stimulation. A lot of people who were ADHD in their childhood will have children who are ADHD, it's possible. I think there could be an environmental influence too but I think the strongest one would be genetics. So I must admit it's quite overwhelming. They are full of energy and their inability to actually focus on anything is quite hard on any professional working with them. It's difficult with that level of energy to kind of remain calm as a practitioner is actually quite hard. So first I would screen and then get collateral and straight to psychodiagnostic assessments. So behaviourally I think psychotherapy, skills before pills always and if worst comes to worst you can use some of the ADHD medication. You know rather understand the kid and assist them than putting them on drugs that make them compliant, that's my opinion. (PK) A teacher can look at a child a "naughty child" and say he/she			
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has ADHD. That's my thing with diagnosing is that it's not as easy as it's made out to be that every Tom, Dick and Harry has ADHD. Find out if a child has ADHD, you should go through the proper channels, go to a psychologist, educational psychologist, any psychologist. Go through the proper channels. I feel that it's a chemical imbalance in your brain. There's definitely a genetic aspect. It is difficulty paying attention to certain things or difficulty with hyperactivity for example being very fidgety or forgetting a lot of where you've placed things or difficulty sitting still in a lecture room. There are things like forgetfulness... forget your keys and you don't know where you put your keys. With adults if it's a student...you find yourself distracted in the lecture room, you might think "oh! this person is doing this" or "what's this person doing? Making your own observations also I know that there are ADHD assessment tools. So I would definitely look at treating with pharmacology in conjunction			
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with a therapeutic approach for adults. It's not a miracle drug either, you need management, you need supervision, you need responsibility in the management of the child ... you still need to manage it, it's not a miracle drug that's just going to "fix" what's wrong. So when we were studying and we learnt a lot about children because it's prominent in children and you learn these cute and wonderful techniques with children but they don't necessarily work with adults. Supervision did help absolutely but possibly having better tools for adults with ADHD. So maybe being exposed to various tools for adults. Yes I did my own research eventually but if I had to say going into it, having a bit more tools... Surprisingly a lot of students struggle with it, it's not just one person, I saw quite a few students who had ADHD... it's actually more common than I thought. So some were very difficult and draining and others were okay... some clients were really lovely and you could work with them and it wasn't too difficult			
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(PL) ADHD is a neurodevelopmental disorder. ADHD is when someone struggles to pay attention, to organise themselves, they struggle with motivation, they often lose things, they're disorganised and forgetful but to such a degree that really does impact their ability to function in average day-to-day life you take a severe blow to the head, you might start to express the criterion for ADHD. Certainly a component of that seems to be genetics. I believe that you can't properly assess whether someone expresses criterion or symptoms of ADHD in a single session. I am very pro blended treatment or hybrid treatment, coupling medication where it is appropriate, so in psychiatric treatment using medication when it is necessary, but never in isolation. I don't think psychiatric medication should ever be taken in isolation. I think it should always be coupled with some form of therapy. Cognitive Behavioural Therapy (CBT)			
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(PM) It's a developmental disorder. There's two main aspects of ADHD that you see, the inattention and then the hyperactivity/impulsivity aspect. We see it mostly in children and it's got quite huge effects on their cognitive developments, their scholastic performance as well as their emotional development. they are just always on the go, they don't stop doing things, not be able to regulate those emotions to come down so it would be inappropriate in terms of the context that they're in. I think that's one of the most if not the most important aspects to diagnosing ADHD in children. It's to corroborate what you're seeing. there is diagnostic tool that you can use it's called the Conners rating scale and it does look for aspects of ADHD but you can't use that exclusively to diagnose. I think it is quite a diagnosis that changes lives of individuals and it can't just be thrown around like it currently is. I think that there needs to be a bigger area of			
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consultation and observation before this very big diagnosis and all this medication is given to this child. An internal lack of self-confidence and self-awareness in the things they are doing and how it's impacting others but also low self-confidence from always being shouted at that would impact their self-esteem there is benefit to medication, the likes of using the Ritalin or Concerta I would definitely say CBT, but CBT in the sense of equipping them with the skills and the tool box that they will need to go further. I think that psychoeducation for the parents is massive. So helping them to really understand the disorder, to know why medication is necessary. So theoretically I've got the knowledge but application is so different to theory... I can't with 100% certainty say that this is the right thing to do and the right procedure to follow. I would definitely do a lot of consultation of resources and I would also seek supervision because I know			
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it's not an area I'm competent in as of yet			
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Addendum H: Proof of Turn-It-In Submission



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Chapter 1: Overview of the Study

Multiple efforts have been made to enhance knowledge about Attention-Deficit/Hyperactivity Disorder (ADHD) and institutions of higher learning play an optimal role in advancing public education using platforms like lectures, seminars, and workshops done for both health and non-health professionals (Murtani et al., 2020). Future healthcare professionals, such as psychology master's students, are exposed to such platforms as sources of knowledge throughout their training process. This knowledge gets to be implemented when helping patients with various psychological disorders, both while they are still students and in their future careers. Such individuals are entrained with the integral role of contributing to the general welfare of patients in the healthcare system. Knowledge of psychology master's students may influence their perception and ultimately how they offer services to clients, as well as their academic performance and professional development. Thus, it seems a benefit to the students, patients, and general literature to explore a topic that taps into the students' knowledge and perceptions of ADHD, as this has implications for future treatment of and attitudes towards patients and/or clients with ADHD.

In light of the above, the purpose of this study was to explore knowledge and perceptions of ADHD among psychology master's students of the North-West University. The first chapter provides a broad overview of the research study, problem contextualisation and formulation, motivation of the study, and the focus of the study. An overview of the research methodology is also outlined, together with the ethical implications.

Addendum I: Language Editing Certificate



DECLARATION OF LANGUAGE EDITING

I, Christien Terblanche, hereby declare that I edited the text titled:

Exploring Attention-Deficit/Hyperactivity disorder knowledge and perceptions among psychology master's students of the North-West University

for **MM Matau** for the purpose of submission as a postgraduate study for examination. Suggestions were indicated in track changes and application was left to the author.

Regards,

CTerblanche

CME Terblanche

Cum Laude Language Practitioners (CC)

South African Translators Institute accr nr: 1001066

Full member of the Professional Editors Guild